

AN ILLUSTRATED CATALOGUE
OF THE
ASIATIC HORNS AND ANTLERS
IN THE COLLECTION OF THE
INDIAN MUSEUM.

BY
T. BENTHAM.

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CALCUTTA :
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CALCUTTA .

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PREFACE.

My object in asking Mr. Bentham to prepare this catalogue of the horns and antlers in the collection of the Indian Museum and recommending its publication to the Trustees has been twofold. In the first place, a catalogue of the kind seemed likely to be of use to sportsmen, who frequently write to the Museum for information regarding horns and antlers, and in the second I thought that it might serve as an appeal to those in a position to help the Museum by giving us specimens. The greater part of our collection of Mammals consists of the gifts of naturalists and sportsmen of a bygone generation; it is now rare for us to obtain specimens of the Ungulates except by purchase from dealers. Assistance given us increases our power of assisting the amateur, and we are often placed in the somewhat ridiculous position of being unable to answer inquiries about some common animal, simply because we cannot refer to specimens so common that no one has taken the trouble to collect them. The exact distribution of many of the Indian species is still unknown, and can only be properly investigated by the examination of large numbers of examples from a large number of localities.

As this work is intended primarily for sportsmen and field naturalists, although I trust that it will not prove devoid of interest even to museum zoologists, measurements are given in inches and tenths of inches instead of centimetres and millimetres; but a table for converting the one into the other is given at the end of Mr. Bentham's introductory note. There are other "anachronisms," for which I must accept the responsibility and as regards which adverse criticism must be expected. No attempt has been made to bring the nomenclature of the Ungulates "up to date." In the babel of names that now rages round many of the common animals the safest course to take has seemed to me, in the circumstances, to adopt, without deviation therefrom, the nomenclature of some standard work readily accessible to naturalists. I have therefore recommended Mr. Bentham to follow that of the late Dr. W. T. Blanford's volume on the Mammals in the "Fauna of British India and Ceylon." No great difficulty has been experienced in bringing the nomenclature of extra-Indian Ungulates represented in the collection (to which Dr. Blanford himself contributed so large a share) into harmony with that of this invaluable work. I have also advised Mr. Bentham to ignore many of the species sub-species and varieties into which some of the common Mammals have recently been divided. Some of these

"species," etc., are merely revivals from the classification of a less scientific age, many are founded on imperfect evidence and are due rather to a theory that animals must vary locally than to the examination of a sufficient number of specimens; even in the few cases in which a large number of examples of each species from a large number of localities have been examined, the student of human nature *plus* zoology may doubt whether it is beneficial to the study of the latter that minute differences should be recognized by the giving of new names to which their author can append his own in perpetuity. The term "blanket name" has recently been coined by those who believe in the system of multiplying species indefinitely, to mean names (such as *Mus rattus* and *Nemorhaedus sumatraensis*), which they regard as representing not single species but groups of allied forms. The names used in this catalogue are in many cases "blanket names."

With this qualification, the collection of horns and antlers in the Museum is nearly complete so far as the Fauna of the Indian Empire is concerned, while numerous heads of interesting species from other Oriental countries are also included. Of the species recognized by Blanford as Indian only Fea's Barking-deer (*Cervulus fea*) is not represented. It has, therefore, been possible to give photographs of the horns or antlers of all the Indian Cervidae and Bovidae but one. Care has been taken to choose well-developed horns of known *provenance* whenever possible. Such photographs may not be devoid of value even in the eyes of those who regard "blanket names" with contempt.

N. ANNANDALE,

Superintendent, Indian Museum.

CALCUTTA,)
August 23rd, 1908. }

INTRODUCTION.

IN 1890 Mr. Selater, then Deputy Superintendent of the Indian Museum, wrote the second part of the Catalogue of Mammals contained in this institution. This volume contains an account of the Bovidae and Cervidae, with which the present work also is concerned. It does not, however, go into the measurements of the skulls and horns of these two groups. I have therefore been asked by the Superintendent, Dr. N. Amundson, to prepare a catalogue giving measurements of the fine collection of horns of Asiatic Ungulates exhibited on the walls of the Mammal gallery, so that the book might be of use to sportsmen and others. This has accordingly been done, some 450 specimens having been measured.

Most of the species are found within Indian limits. All are found within the Oriental Region with the exception of two or three species from Palearctic Asia, from which continent all the specimens here described have been obtained. The European, American and African collection is too small and incomplete for special notice.

The collection contains two types, both of species which, unfortunately, do not occur in Indian limits. There are several records, notably a specimen of *Budorcas taxicolor* from the Mishmi Hills and a specimen of *Nemorhaedus sumatraensis* presented by Col. Phayre. There are two records of *Bos frontalis*, but it is difficult to know whether these are pure bred or hybrids, since there is very little history attached to them, besides which it has long been disputed as to whether *Bos frontalis* occurs wild in Indian limits. Several authors take it that this species is identical with *Bos gaurus*.

The specific identity of *Ovis cycloceros* and *Ovis vignei* has now been more or less fully established and they are therefore included under one species, viz., *Ovis vignei*.

T. BENTHAM.

NOTICE CONCERNING MEASUREMENTS, etc

Length is in inches.

The length of horns is in all cases measured along the outside curve, in deer above the burr

Circumference is measured at base of horn, in deer above the first ring.

All horns with a core have a tendency to shrink when kept for some years

NOTE.—The numbers on the plates refer to the serial numbers in the tables.

TABLE FOR CONVERTING INCHES INTO CENTIMETRES

Inches.	Centimetres.	Inches	Centimetres.	Inches.	Centimetres.
·06	·15	2·5	6·25	7·5	18·75
·125	·3	3	7·5	8	20
·25	·6	3·5	8·75	8·5	21·25
·5	1·25	4	10	9	22·5
·625	2·1	4·5	11·25	9·5	23·75
·66	1·66	5	12·5	10	25
·875	2·2	5·5	13·75	10·5	26·25
1	2·5	6	15	11	27·5
1·5	3·75	6·5	16·25	11·5	28·75
2	5	7	17·5	12	30

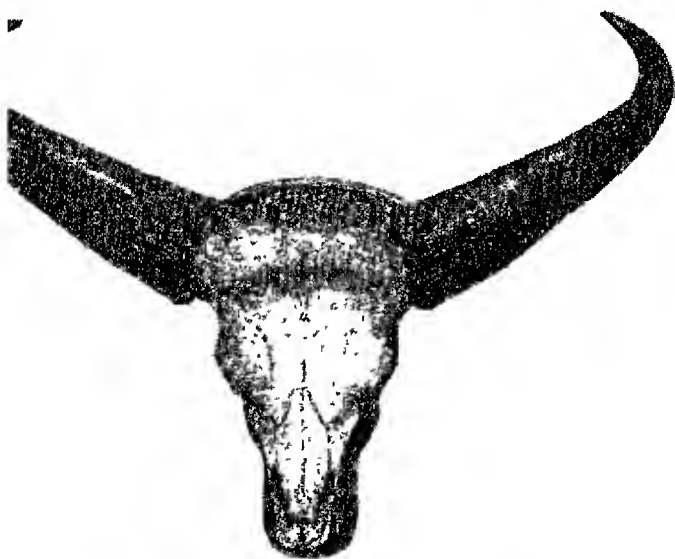
ERRATUM.

PAGE 35, below plate, For " $\frac{1}{4}$ th scale" read " $\frac{1}{11}$ th scale."

BOS GAURUS, Hamilton Smith.

(THE GAOUR OR "BISON.")

N	Sex	Locality	Donor.	Date.	Basal length of skull	Breadth of skull.	Length of horn.	Circumference at base.	Tip to tip.
1	♂	?	W. T. Blauford	1868	19	8.5	20	10.5	4.7
2	♀	Assam	Col. Jenkins	1844	19.5	9	19	12.1	12.7
3	♂	?	?	19.5	8.3	15.5	10.8	9
4	♂	Chalbassa	Maj. Tickell	1842	20	9	25.8	15.3	27
5	♂	Gauhati, Assam	Maj. Pollock	1870	21.9	10.3	19.4	11.2	13.8
6	♂	Malacca	Dr. Maingay	1863	?	?	23.4	17	20.6
7	♂	Burma	Col. Phayre	1861	?	?	32	18	2.2
8	♂	Gauhati, Assam	Maj. Pollock	1870	19.05	8	20.5	13	20.25
9	♂	Assam Hills	Col. Guthrie	1862	19.75	10	?	?	?
10	♀	Chittagong	Col. Jenkins	1848	20.5	11.75	?	?	?
11	♂	Ditto	J. A. Campbell	1879	?	?	19.75	12	5.5
12	♂	Ditto	Ditto	1879	19.75	10	31.5	19	15.75
13	♂	?	Ditto	1879	?	...	21	14	21.5
14	♂	Chittagong Hill Tracts	Purchased	1847	19.5	10.5	29.25	16.5	20.75
15	♂		J. T. Jarbo	1881	?	?	22.75	12.75	6.75



Bos gaurus, 1st scale

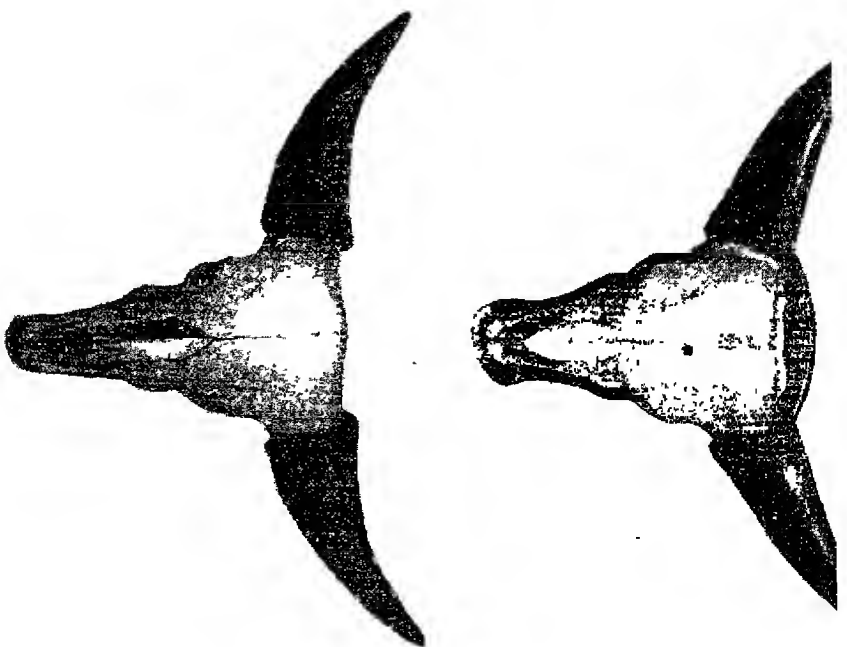
BOS FRONTALIS, Lambert.

(THE GAYAL OR MITHAN)

Locality.	Donor.	Date.	Basal length of skull.	Breadth of skull.
Chittagong Hill Tracts	J. T. Jarbo ...	1879	20·5	10
Chittagong	R. W. Frith ...	1850	17·75	9 5
Ditto	Ditto ...	"	18·5	8
Ditto	Ditto ...	"	17·5	8 75
Ditto	Ditto ...	1850	19·25	9
"
...
	Calcutta Zool. Gardens, E. Blyth.	1857	20·25	8 25
..	Calcutta Zool. Gardens.	1893	..	...

Distribution:—Akyab northwards through Arakan and the Chittagong Naga Hills: Daffla Hills.
 Stanford, *Fauna of British India*, Mammalia, p. 487.

* Record



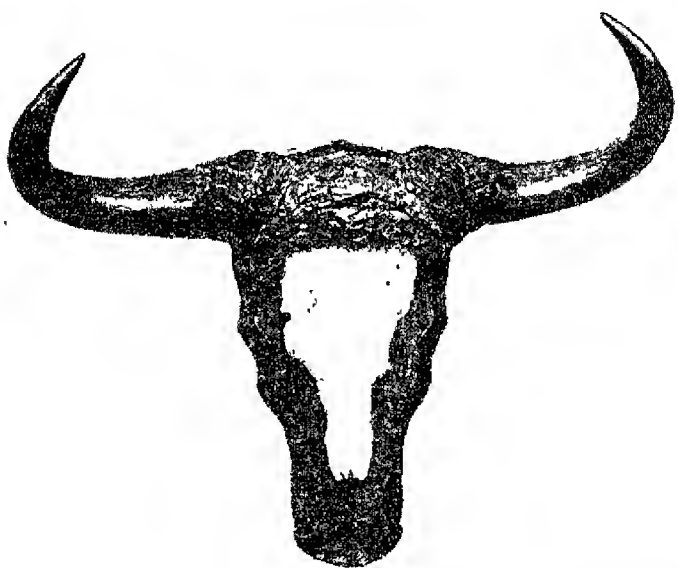
BOS SONDAICUS, Schlegel.

(THE BANTING.)

No.	Sex	Locality	Donor.	Date.	Basal length of skull	Breadth of skull.	Length of horn.	Circumfer- ence	Tip to tip
1	♂	Burma	... Prince of the Netherlands	1837	'	'	23.5	16	15.5
2	♂	Java	... The Batavian Society.	1844	'	'	31*	21.5	30
3	♂	Upper Pegu	... Col. Phayre	1849	18.75	8	21.5	12.5	19.5
4	♂	Burma	... Zool. Gardens	1885	17	6.25	7	6.75	14.75
5	♂	Upper Pegu	... Col. Phayre	1850	'	8.5	36.5	12	22.75
									"Hybrid"

Distribution: —Arakan through Burma and the Malay Peninsula; Java, Bali, and Borneo.
Cf. Blanford, *Fauna of British India, Mammalia*, p. 489

* Ro and



Bos sondaicus, $\frac{1}{2}$ th scale.

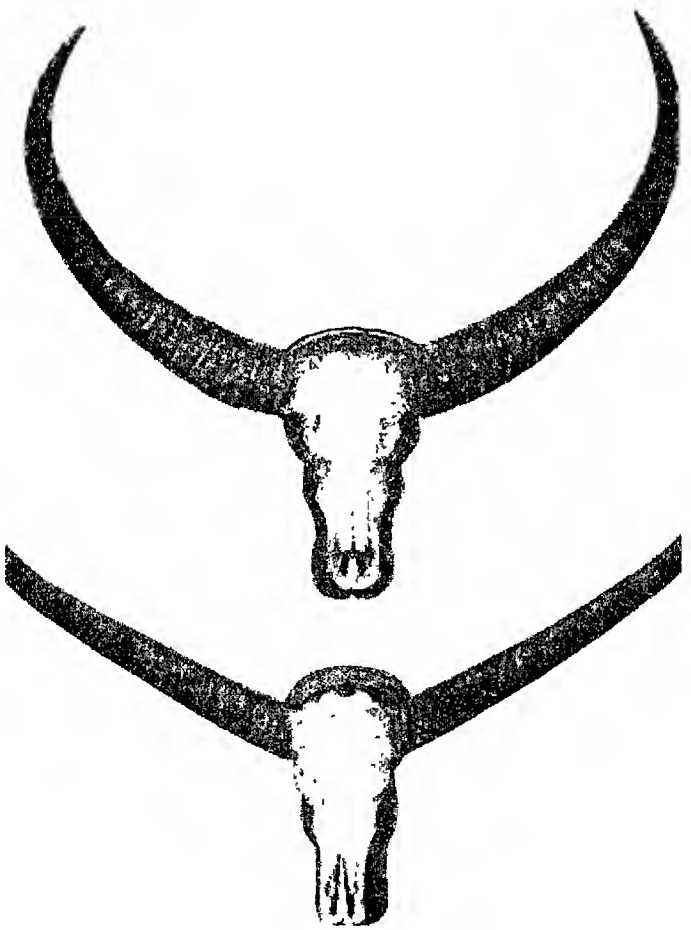
BOS BUBALUS, Linnæus.

(THE INDIAN BUFFALO.)

No	Sex.	Locality.	Donor.	Date.	Basal length of skull.	Breadth of skull.	Length of horn	Circumference	Tip to tip
1	♂	Kaliabar, Assam	J. Hamilton	1879	22.5	9	48.3	16.75	33.5
2	♂	Assam	Dr. Wallich	1816	24	9	49	16	48.75
3	♂	Ditto	Maj. Brodie	1848	24.5	9	42.5	18.5	40
4	♂	Ditto	Ditto	1848	21.5	8.5	35.8	16.5	25.75
5	♂	?	Ditto	1848	23	7.5	43	15.6	17
6	♂	?	?	24.5	9	31	18.5	27.4
7	♂	?	?	21.75	6.75	25.8	12.5	17.25
8	♂	Dibrugarh, Assam	Sir J. Barlow	1856	23.3	7.25	41.3	18.6	23.5
9	♂	40.25	19.5	46.15
10	♂	Sadiya, Assam	Col. Graham	1877	22.25	8.5	40.25	17.75	19.5
11	♀	Assam	Dr. Mouat	1859	21.75	7.75	52.4	13.5	23.5
12	♀	Ditto	Dr. Wallich	1860	24.8	7.5	46.6	12.75	72
13	♀	Ditto	Ditto	1860	22.5	7.25	52.75	12.5	30
14	♀	Ditto	Ditto	1860	23.8	8.5	47.75	13.4	45.5
15	♂	Ditto	Ditto	1860	24	9.25	53.75	18.25	40.5

Distribution.:—Southward from the Gauges to the Godavery; westward to Mundla; the Nepal Terai; P 1 neah; the Sunderbunds and the valley of the Brahmaputra.

Record Head.:—One horn, length 77.3 in. British Museum (*cf.* Rowland Ward, *Horn Measurements*, p. 223).
Cf. Blanford, *Fauna of British India*, Mammalia, p. 491.



Bos bubalus, $\frac{2}{3}$ th scale

OVIS HODGSONI, Blyth.

(GREAT TIBETAN SHEEP OR "OVIS AMMON.")

No	Sex	Locality	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference.	Tip to tip
1	♂	"Cachar"	G. T. Lushington	1862	10·8	6·25	41	16	17·5
2	♂	Ditto	Ditto	1862	?	?	42	16	18·75
3	♂	Ditto	Ditto	1862	?	?	33·25	16·75	21·25
4	♂	Nepal region	Capt. Mitchell	?	13	7	33·5	17	15
5	♂	Tibet	Capt. Smyth	1862	13	6·25	31·75	16	16·5
6	♂	"Cachar"	T. Lushington	1862	...	..	41	17·25	21·5
7	♂	Ditto	Ditto	1862	14·25	6	24·25	13·25	20·5
8	♂	?	?	?	13·5	6·25	28·75	17·5	20·75
9	♂	?	Purchased	1897	14	6·5	38	16	21
10	♂	?	Ditto	1897	14	6·8	43·5	16	20
11	♂	Chang Chenmo, Ladak	S. J. Stone	1888	?	?	36·75	16	20·25

Distribution.—North of the snowy range of Himalayas: Ladak to the country north of Sikkim, altitude 1000 to 15,000 ft.: E. Siberia.

Record Head.—Length 57 in. Circumference 18½ in. Tip to tip 29 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 97).

Cf. Blanford, *Fauna of British India*, Mammalia p. 491



Ovis hodysoni, $\frac{1}{10}$ th scale.

OVIS POLI, Blyth.

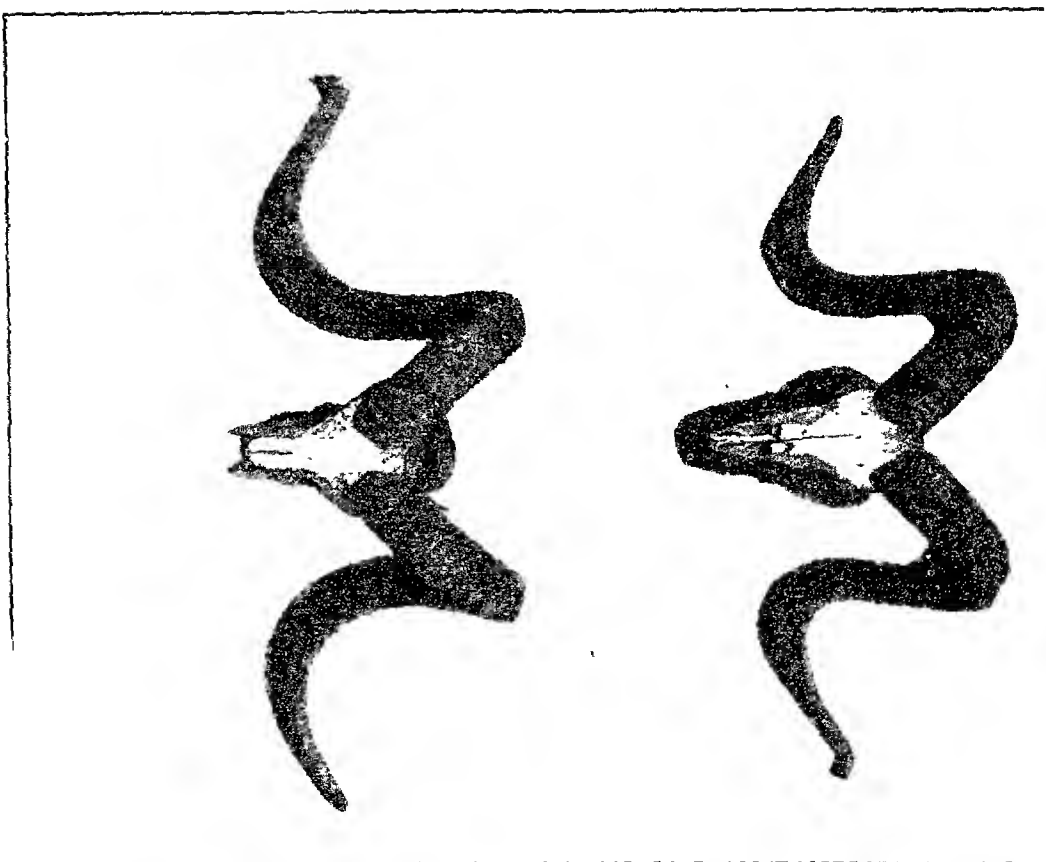
(MARCO POLO'S SHEEP)

Locality	Donor.	Year.	Basal length of skull	Breadth of skull.
Near Kashgar ...	Dr. F. Stoliczka ...	1877	?	5
Ditto ..	Ditto ...	1877	10.75	5.7
British Baluchistan...	E. J. Jones ...	...	13.25	6.25
Tagdanbash Pamir ...	W. A. Lockhart...	1886	15	6
Hunza ...	Col. Biddulph ..	1879	...	6
Thian Shan Mts. ...	Dr. F. Stoliczka ...	1874	...	..
Little Pamir ...	Lieut. Ossetinsky	1896	?	?
Ditto ...	Ditto ...	1896	?	?
Ditto ..	Ditto ...	1896	?	?
Ditto ...	Capt. E. F. McSwiney.	1896	?	?
Near Kashgar ...	Dr. F. Stoliczka ...	1877	?	?
Ditto ...	Ditto ...	1877	?	?

Location:—The Pamir; Thian Shan Range; round Lake Issya; East
 ir; Hunza, N. Gilgit.

Head:—Length 7.5 in. Circumference 16 in. Tip to tip $5\frac{1}{2}$ in. (*cf.* 1

lanford, *Fauna of British India*, Mammalia, p. 496.



N	Sex	Locality	Donor	Year,	Basal length of skull,	Breadth of skull,	Length of horn,	Circumference,	Tip to tip,
1	♂	Nepal	... Capt. J. Manners-Smith.	?	?	?	24.5	11	16.5
2	♂ Juv	Shiraz	...	?	?	?	12	6.75	8.5
3	♂	Khawja, Afghanistan	Genl. Lumsden	1884	?	?	17.75	10	20
4	♂	?	?	?	11	4	24	10.25	19.5
5	♂	?	?	?	8.5	4	15	8.5	18.25
6	♂	?	?	?	10	4.5	19.75	10.4	16.3
7	♂	?	?	?	?	?	11	7.5	15.75
8	♂	Shamiran Mts.	W. T. Blanford	1844	9.5	3.5	20.5	9	16.5
9	♂	Kashmir	H. Duvergne	1891	10.5	4.25	31	11.5	17.75
10	♂	?	?	?	9	3.75	21.75	8.5	12
11	♂	?	?	?	9.5	4.25	25.25	9.5	15
12	♂	British Baluchistan	E. Jones	1853	9.25	4.5	30.5	15.25	15
13	♀	Punjab Salt Range	W. Theobald	1853	9	4	27.5	10.75	12.75
14	♀	Ditto	Ditto	1853	8	3.75	5.5	3.75	4
15	♂	Punjab	W. T. Blanford	1844	8	4	26	9.75	13.5
16	♂	Afghanistan	Purchased	1871	8.75	3.5	4.25	3.75	4.5
17	♂	Jalk, Baluchistan	W. T. Blanford	1877	?	?	27	8.5	13
18	♂	Dizak, do.	Ditto	1872	8.5	3.25	16.25	8	20.75
19	♂	Khawja, Afghanistan	J. E. T. Aitchison	1886	10	4	21.75	10.75	19
20	♂ Juv.	British Baluchistan	E. J. Jones	1889	9	3.9	2.25	3.6	3.5

Distribution Punjab Salt Range; Sulaiman Range; Afghanistan and Baluchistan; Nepal. Ladak and Western Tibet at high elevations; Persia.

Record Head :—Length 39.5 in. Circumference 11 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 104)
Cf. Blanford, *Fauna of British India*, Mammalia, p. 497.



Ovis vignei, $\frac{1}{16}$ th scale.

OVIS NAHURA, GRAY.

(THE BHARAL.)

No	Sex.	Locality.	Donor	Year	Basal length of skull.	Breadth of skull.	Length of horn	Circum- ference.	Tip to tip
1	♂	Himalayas	Capt. Smyth	1860	?	?	23	10.75	16
2	♂	?	Ditto	1860	10.5		24.5	10.75	...
3	♂	?	Ditto	1860	?	...	15	8.75	19
4	♂	Near Tam Sanju Val- ley of Kuen-lun Mts.	Dr. F. Stoliczka	1874	8	4.5	28.25	10.5	20
5	♂	Himalayas	Capt. Smyth	1860	10	3.25	19	10.75	25
6	♂	?	?	?	?	?	18	9.5	23
7	♂	?	?	?	?	?	8.5	5	13.5
8	♂	?	Purchased	?	?	...	6.75	3.5	10.25
9	♂	Himalayas	?	?	?	5	32	12.5	25.25
10	♂ Juv.	?	?	?	?	3.75	4.25	4.25	4.5
11	♂	Sang-Jokh-la Pass, Tibet.	S. J Stone	1888	?	4	22.75	10.2	27
12	♂	N. of Nilang, Garhwal	Ditto	1888	?	4.5	23	11.5	27



Ovis nahuata, 11th scale.

CAPRA ÆGAGRUS, Gmelin.

(THE PERSIAN IBEX.)

No.	Sex.	Locality.	Donor	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	♂	Ispahan, Persia	Shaik Harri	1875	?	?	11.5	4.75	6
2	♂	Sind	W. T. Blanford	1875	?	?	13	4	7.5
3	♂	Ispahan, Persia	Sir O. B. St. John.	1886	9.5	4.25	35.25	7.75	9
4	♂	Sind	Karachi Mus.	1879	10	4	39.75	7.25	3
5	♂	Afghanistan	Sir A. Burnes	1844	...	3.75	31.75	7.5	14.75
6	♂	Sind	Karachi Mus.	1879	...	...	37	8.25	12.25
7	♂	.....	....	...	9.75	3.5	31.25	6.5	11.5
8	♂	Near Shiraz	Sir O. B. St. John	1886	?	?	43.3	9	24.25
9	Juv.	Sind	A. E. Watson, Esq.	1876	?	?	14.25	3.5	5.5
10	♂	Ditto	Ditto	1876	?	?	34.5	8.5	21.5
11	♂	Shiraz	Persian Collection	1876	?	?	40	9	22

Distribution.—Persia, Afghanistan and Baluchistan: the Punjab and Suleiman Ranges; Asia Minor and the Caucasus; the Greek Archipelago.

Record Head.—Length 53 in. Circumference 7.6 in. Tip to tip 8.75 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 112, and Rowland Ward, *Horn Measurements*, p. 148).

Cf. Blanford, *Fauna of British India*, Mammalia, p. 502



Capra aegagrus, $\frac{1}{2}$ th scale.

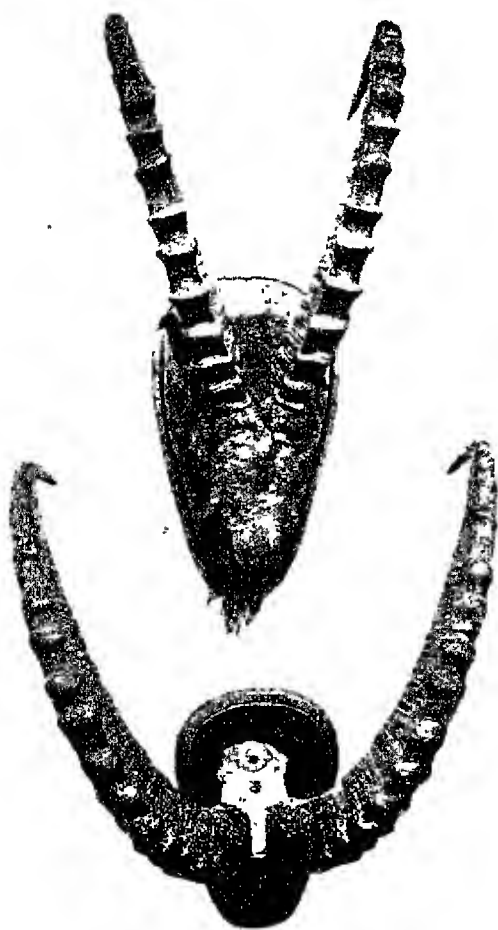
CAPRA SIBIRICA, Mayer.

(KASHMIR AND TIBET IBEX)

No.	Sex.	Locality	Donor	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circum- ference.	Tip to tip
1	♂	?	Purchased	1871	9.75	4	19	9.3	10.25
2	♂	?	Ditto	1871	8.75	4.5	21.75	9.25	10.5
3	♂	Thian Shan Mts.	Dr. F. Stoliczka..	1874	10.25	5.25	34.75	9.5	9.25
4	♂	Purchased	1871	11.25	5	30.5	8.75	14.5
5	♂	Thian Shan Mts.	Dr. F. Stoliczka .	1874	13.5	5.4	31.75	9.5	13.25
6	♂	Near Kashgar	Ditto	1874	?	?	33.25	10.25	11
7	♂	Bunji Gilgit	S. J. Stone	?	?	?	38.25	10.75	21.25
8	♂	Near Kashgar	Dr. F. Stoliczka...	1874	?	?	46.5	11.75	19.25
9	♂	Kalsi, Ladak	N. Elias	1879	?	?	37.75	10.25	13.25
10	♂	No history	?	?	?	?	30	10	13.5

Distribution.—The Himalayas from the Gilgit district (Scully), eastward to Nepal, but not east of Nepal also the higher ranges of Tibet (Hodgson), the Thian Shan (Severtzoff) and the Altai and Sajan Ranges, but not extending east of Ladak (Radde).

Record Head.—Length 57.4 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 120)
Cf. Blanford, *Fauna of British India*, Mammalia, p. 101



Capra sibirica, 3th scale.

CAPRA FALCONERI, Hugel.

(THE MARKHOR.)

No.	Sex	Locality	Donor.	Year.	Basal length, of skull.	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip
1	♂	Gilgit	W. T. Blanford	1879	10	3.75	20.5	9.5	13.75
2	♂	Kashmir	W. Theobald	1878	?	?	23.75	9.5	15.25
3	♂	Bahochistan	W. D. Oldham	1891	?	?	32.4	11.25	15.5
4	♂	Bunji Gilgit	S. J. Stone	1884	12.25	5.25	44.25	10.75	25.5
5	♂	Ditto	Ditto	1884	11.75	4.75	32.75	10.5	25
6	♂	Gilgit	W. T. Blanford	1879	10.75	5	26.25	9	21.5
7	♂	Bunji Gilgit	S. J. Stone	1884	9.75	5.25	30.25	10.5	25.5
8	♂	Gilgit	Dr. Scully	...	?	?	44	11.75	34
9	♂	Ditto	Capt. J. Manners-Smith.	1900	?	?	45	10.75	37.75
10	...	Ditto	Sir A. Burnes	1840	11.5	4.75	33.5	10.25	One horn
11	♂ Juv.	Ditto	Capt. J. Manners-Smith.	1901	7.5	3	5	3.4	3.6

Distribution :—Afghanistan and the Tibetan Himalayas; the Pir Panjal in Kashmir; the Himalayas from Gilgit to the Beas River; the Suleiman Range; Ladak.

Record Head :—Length 63 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 126).

Cf. Blanford, *Fauna of British India*, Mammalia, p. 505.



Cupra falconeri, $\frac{1}{16}$ th scale.

HEMITRAGUS JEMLAICUS, Smith.

(JHARAL OR TEHR.)

No.	Sex	Locality.	Donor	Year.	Basal length of skull	Breadth of skull	Length of horn.	Circumfer- ence.	Tip to tip
1	♂	Nepal ...	?	?	?	?	7.75	7.75	6.25
2	♂	Near Mussoorie ...	Miss Millman	1873	11.25	4.25	12.75	8.75	5
3	♂	?	Capt. Smyth	1862	8.5	4.5	9.75	5.75	8.5
4	♂	Pir Panjal, S. Slope...	N. Elias	1879	?	?	9.5	8.5	4.75
5	♂	Himalayas	Dr. T. C. Jerdon...	1888	10	4.75	12	7.5	6.75
6	♂	Ditto	B. H. Hodgson ..	1844	10.75	4.5	10.5	8.5	8
7	♂	Ditto	Ditto	1844	?	?	13	9	9
8	♂	Ditto	Ditto	1844	?	?	10.5	8.3	6.6

Distribution:—The whole of the Himalayas from 6,000 ft. upwards.
Record Head:—Length 15.5 in. Circumference 8.25 in. (cf. Lydekker, *Hume Animals of India*, etc., p. 135).

Cf. Blanford, *Fauna of British India*, Mammalia, p. 509



Hemitragus jemlensis, 1st scale.

HEMITRAGUS HYLOCRIUS, Blyth.

(THE NILGIRI WILD GOAT.)

No	Sex.	Locality.	Donor.	Year	Basal length of skull	Breadth of skull.	Length of horn	Circumference.	Tip to tip.
1	♀	Nilgiri Hills	Madras Museum...	1879	8.5	3.75	8.25	5.75	3
2	♀	S. Malabar	Dr. T. C. Jerdon...	..	9	3.75	9.75	7.25	4.25
3	♀	Nilgiri Hills	L. C. Stewart ..	...	10	3.25	8.75	6	3.25
4	♂	Travancore	Rev. J. Baker ..	...	9.75	4	15.75	8.75	6.75
5	♂	Deviculam, Travancore.	A. W. Turner ..	1889	9.5	4.25	14	8.25	4.5
6	♂	Nilgiri Hills	Madras Museum...	1879	10	4	13.8	8.5	5.75

Distribution.:—The Nilgiris and Western Ghats of Cochin and Travancore.

Record Head.:—Length 17.5 in Circumference 9.85 in. (cf Lydekker, *Game Animals of India*, etc, p 138)

Cf. Blanford, *Fauna of British India Mammalia* p 511



Hemitragus hylocranus, and *H. jemlaicus*, $\frac{1}{3}$ th scale.

NEMORHÆDUS BUBALINA, Hodgson.

(THE SEROW.)

No.	Sex.	Locality.	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	♂	Sikkim	...	1877	11	3.7	7.6	5	4.5
2	♂	Sanda Valley, Yunnan	L. Mandelli	1868	11.3	4	8.8	5.5	2.25
3	♂	Ditto	Yunnan Collection	1868	7.75	4.3	7.5	5	2.8
4	♂	Ditto	J. Anderson	1868	?	?	7.6	5	4.5
5	♂	Ditto	Ditto	1868	..	...	9.5	5	2.5
6	♂	Sikkim	...	1877	11.25	3.5	7.75	4.5	2.25

Distribution :—The Himalayas from Kashmir to the Mishini Hills ; obtained by Anderson in Yunnan.
Record Head :—Length 13.5 in. Circumference 8.75 in.

Cf Blanford *Fauna of British India Mammalia* v 514 and Pocock *P Z S* 1908 v 173



Nemorhædus bubalina, ½th scale.

NEMORHÆDUS GORAL, Hodgson.

(THE GORAL.)

N	Sex	Locality.	Donor	Year	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence	Tip to tip.
1	♂	Sikhim ...	B. H. Hodgson ...	1862	8.5	3	7	3.5	4
2	♂ Juv.	Ditto ...	?	?	?	?	4.75	2	1.75
3	♂	Ditto ...	B. H. Hodgson ...	1862	8.75	3.25	5.75	3.5	3
4	♀	Ditto ...	Ditto	1862	?	?	6.25	3.5	2.75
5	♂ Juv.	Kashmir	W. Rutledge	1893	6.5	2.4	2.1	1.75	1.8
6	♀ Juv.	Ditto ...	Ditto	1893	7.5	3	5	3.25	2.75
7	♂ Juv.	Ditto ...	Ditto	1893	7.75	2.7	4.5	2.3	2.75

Distribution:—Himalayas from Kashmir to Bhutan, Siwalik Hills (Kinloch), Naga Hills (Butler).
Record Head:—Length 8.5 in. (*cf.* Lydekker, *Gane Animals of India*, etc., p. 151)
Cf. Blauford, *Fauna of British India* Mammalia, p. 516, and Pocock, *P. Z. S.*, 1908, p. 173



NEMORHÆDUS SUMATRAENSIS, Gray.

(THE KAMBING UTAN OR KAMBING GURUN.)

No.	Sex	Locality.	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn	Circumfer- ence.	Tip to tip.
1	♂	Arakan ...	Col. Phayre	1844	?	?	9.5 *	5.75	1.75
2	?	?	?	?	?	?	?	?	?
3	♂	Tenasserim	Maj. Berdmore	1861	11.75	4	6.75	4.5	3.5
4	♂	Chittagong Hill Tracts	J. T. Jarbo	1879	12.5	3.5	6.75	4.5	...
5	♂	Ditto	Ditto	1879	12.25	4	8	5	2.5
6	♂	Tenasserim	Maj. Berdmore	1861	13	4	8.5	5.25	4
7	♂	Province Wellesley	India Mus., London	?	12	3.75	8.5	5.25	4.25
8	♂	Tenasserim	Maj. Berdmore	1861	11	4	7	4.25	2.75
9	♂	Ditto	Ditto	1861	11.3	4.25	8.25	4.75	2.75
10	♀	Shillong, Assam	C. R. Cock	1879	11	4	8	5	4.3
11	♂	Assam ...	Ditto	1879	?	?	7.25	4.5	4.25
									5.5

Distribution:—Assam, Burma, the Malay Peninsula and Sumatra.
Cf. Blanford, *Fauna of British India, Mammalia*, p. 514, and Pocock, *P. Z. S.*, 1908, p. 173.



Nemorhædus sumatraensis, ♂th scale.

(THE TAKIN.)

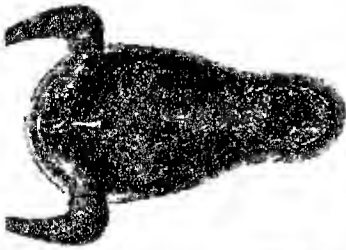
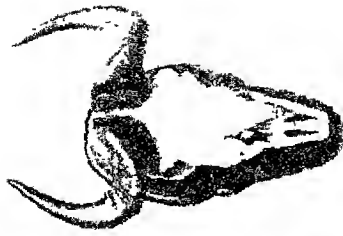
No.	Sex.	Locality.	Donor.	Year.	Basal length of skull	Breadth of skull.	Length of horn.	Circumference.	Tip to tail
1	♀	Mishmi Hills, Assam	F. Jenkins	1850	?	?	9.5	7.3	14.25
2	♂	Ditto	Ditto	1850	?	?	15.25	8.5	10.3
3	♂	Ditto	Ditto	1850	?	?	24.5*	11.5	12.8
4	♂	Ditto	E. T. Dalton	1856	?	?	22.4	11.8	10.5
5	♂	Ditto	Dy. Commissioner	1882	17.5	6	20.25	11.75	8.6
6	♂	A. R. Comber	1867	16.25	6.5	21.25	11.6	12.75
7	♂	Mishmi Hills, Assam	Maj. W. Brydon	1884	14.76	5.5	15.6	9.8	7.25
8	♂	Assam	Lt.-Col. Graham	1879	?	?	20.75	10.3	9.25
9	♀	Mishmi Hills, Assam	F. Jenkins	1850	?	?	9.5	7.8	13.5
10	♂	Ditto	Ditto	1850	?	?	14.8	9.66	8.5
11	♂	Eastern Tibet	J. White	1906	13.25	5.75	13.75	9.75	6.25
12	♀	Mishmi Hills, Assam	Deputy Commissioner.	1882	...	5.25	12.5	8.75	11

Distribution:—The Mishmi Hills, Assam, through Eastern Tibet; probably to China.
Cf. Hodgson, *Journal As. Soc., Bengal*, xix, p. 65, and Milne-Edwards, *Réch. des Mammifères*, p. 367.

Reeml.

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BOSELAPHUS TRAGOCAMELUS, Sclater.

(THE NILGAI)

No	Sex.	Locality	Donor	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference.	Tip to tip
1	♂	?							
2	♂	Alwara, Jumna R.	S. Sherwill	1843	14.75	3.75	4.75	3	4
3	♀	Banda Dist.	J. Cockburn	1881	17.8	5	8.75	7.6	4.25
4	♀	Ditto	Ditto	1881	16.25	4.25	...	.	...
5	♂	Cawnpore	Ditto	1881	15.8	4	..	...	...
6	♂	Ditto	Ditto	1872	15.5	4.6	7.25	7.25	4.6
7	♂	Ditto	A. S. B.	?	16.75	5.3	6.75	6.75	6.3
8	♂	Ditto	Ditto	?	16.8	5.25	6.75	6.5	4.4
			Ditto	/	?	?	6.25	4.75	7.5

Distribution.—The Peninsula of India, from the foot of the Himalayas to Cape Comorin, excluding Lower Bengal and Ceylon.

Recond. Head.—Length 11.75 in. Circumference 9.5 in. (Not now in existence; cf. Lydekker, *Game Animals of India*, etc., pp. 166, 167.)
(cf. Blanford, *Fauna of British India*, Mammalia, p. 517)



Boselaphus tragoramelus, $\frac{1}{16}$ th scale.

TETRACERUS QUADRICORNIS, Gray

(THE FOUR-HORNED ANTELOPE.)

No.	Sex.	Locality.	Donor	Year.	Basal length of skull	Breadth of skull	Length of horn, small and large.	Circumfer- ence, small and large.	Tip to tip, small and large
1	♂	S India	Sir W. Elliot	1845	8	3.5	1.75	2.25	1.5
2	♂	Raniganj	Babu Mullick	1872	8	3.25	.5	1.5	1
3	♂	Asingari, C. P.	W. T. Blanford	1866	...	...	...	1.5	1
4	♂	India	J. B. Lawson, Esq.	1844	7	3.25	1.75	...	2
5	♂	S. India	Sir W. Elliot	1845	7.5	3	1.5	1.75	1.5
6	♂	Ditto	Ditto	1845	7.75	3	...	...	...
7	♂	Ditto	J. Cockburn	1886	8.25	3.5	.5	1.25	1.5
								2.25	2.75

Distribution:—Through the Peninsula of India, in wooded and hilly tracts, especially the Central Provinces; absent in the Ganges valley and Ceylon.

Record Head:—Length of large horn 5 in. (*cf.* Lydekker, *Game Animals of India*, etc., p. 172).
Cf. Blanford, *Fauna of British India*, Mammalia, p. 519



Tetracerus quadricornis, 4th scale.

No.	Sex.	Locality.	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn round curve	Circumfer- ence.	Tip to tip.
1	...	Banda District	J. Cockburn	1879	8.75	3.5	25.25	4.75	14.25
2	..	?	W. Rutledge	1870	9.5	3.5	*27.25	4.75	11.75
3	...	Banda District	Ditto	1881	8.75	3.25	30.5	4.5	16
4	...	?	J. J. Attanass	...	9.5	3.5	*10.5	4.75	...
5	...	No history	?	?	9.25	3.5	28.75	5	6
6	...	Karnal District,	S. J. Stone	1891	9.75	3.75	36	4.75	18
7	...	Punjab.							
8	...	Banda District	J. Cockburn	1881	9	3.5	27	5	17.75
9	...	Karnal " Punjab	S. J. Stone	1891	8.75	3.5	30.5	4.25	21.75
10	...	Banda District	Rajah R. Mullick	1870	8.5	3.25	17.75	4.75	11.8
11	...	Punjab ...	S. J. Stone	1891	9.25	3.75	31.8	4.75	23
12	..	Ditto ...	Ditto	...	8.6	3.8	31.3	4.75	21.5
13	...	Banda District	J. Cockburn	1881	...	...	22.5	5.25	12.5
14	...	Doon of Assam	J. J. Attanass	1842	9.75	3.5	29.25	4.8	15.25
15	...	Banda District	F. Jenkins	...	...	...	30.25	4.9	13
16	...	?	J. Cockburn	1881	8.8	3.25	20.25	4.25	7.9
17	...	Agra ...	?	?	?	3.25	22.75	3.5	13
18	...	Banda District	J. Cockburn	1879	9	3.75	30.3	5	16.5
19	...	Allahabad District	Ditto	1881	9	3.75	26.25	5.25	14.5
20	...	?	Ditto	1879	8.5	3	23.75	4	14.25
	...		?	?	10.25	3.25	30.75	5	11.25



Antelope cervicapra, $\frac{1}{2}$ th scale.

ANTILOPE CERVICAPRA, Pallas—*contd.*

(THE INDIAN ANTELOPE OR BLACK BUCK)—*contd.*

No	Sex.	Locality.	Donor	Year.	Basal length of skull.	Breadth of skull	Length of horn round curve.	Circumfer- ence	Tip to tip.
21	.	"Bokhara"	?	?	9.25	3.25	26.25	4.8	10.5
22	...	Allahabad	J. Cockburn	1879	?	3.5	23.75	4.75	15.5
23	..	Banda District	Ditto	1881	8.8	3.25	21.9	4.75	12.25
24	...	"	?	?	8.75	3.25	21	4.4	12.5
25	...	Banda District	J. Cockburn	1879	9.25	3.3	19.25	4.75	40
26	...	Chanda	Mrs. Turnbull	1837	8	2.5	9.75	...	.

Distribution:—The plains of India from the foot of the Himalayas to Cape Comorin and from the Punjab to Lower Assam; Lower Bengal at Midnapore and Orissa; unknown in Ceylon, the Malabar Coast and the Ganges Delta.

Record Head:—Length not round curve 28.25 in. Round curve 40.5 in. (*cf.* Rowland Ward, *Horn*

Measurements, p 95)

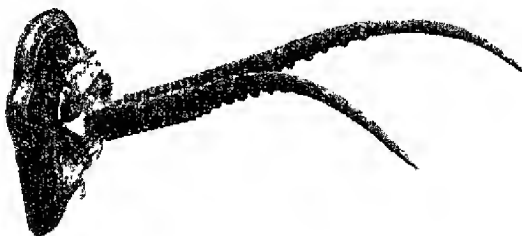
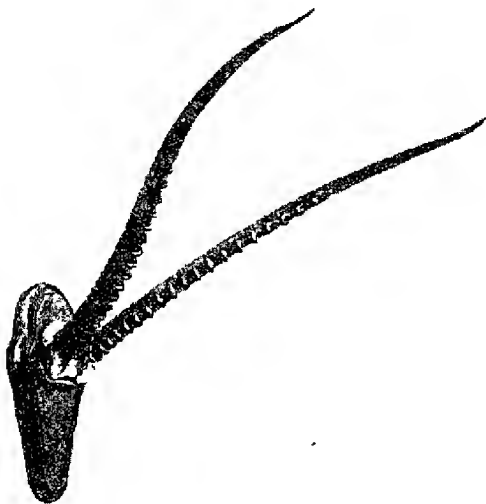
Cf. Blanford, *Fauna of British India*. Mammalia, p 521

PANTHOLOPS HODGSONI, Hodgson,

(THE CHIRU.)

No.	Sex	Locality.	Donor	Year.	Basal length of skull	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	♂	Tibet	L. Mandelli	1877	?	?	26.3	5.25	15.5
2	♂	Ditto	Ditto	1877	10.5	3.75	23.5	4.75	14.25
3	♂	Ditto	Ditto	1877	?	?	23.5	5.5	11.75
4	♂	Ditto	Ditto	1877	?	?	23.25	5.75	12.5
5	♂	Kum Ladak	J. Biddulph	1873	?	?	24.25	5.5	14.5
6	♀	Yarkand	Dr. F. Stoliczka	1873	10	3	...	..	...
7	♂	"Almora Dist."	Purchased	1908	?	?	25.25	6	15
8	♂	Ladak	J. Biddulph	1873	10.25	3.5	22.5	5.25	12.25

Distribution:—Tibet from 12,000 to 18,000 ft., from Ladak eastward; also found in North Sikkim.
Record Head:—Length 27.75 in. Circumference 6.12 in. Cf. Rowland Ward, *Horn Measurements*, p. 102
 Cf. Blanford, *Fauna of British India*, Mammalia, p. 524, and Lydekker, *Game Animals of India*, p. 155



Pantholops hodgsoni, 1 $\frac{1}{2}$ th scale.

GAZELLA SUBGUTTUROSA, Blainville,

(THE PERSIAN GAZELLE.)

No	Sex.	Locality.	Donor.	Year	Basal length of skull	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	♀	Yarkand	Dr. F. Stoliczka...	1874	8.25	2.75	9.5	4.5	4.25
2	♂	Near Ispahan	Sir O. St. John ..	1870	8	2.75	9.5	4.25	6.5
3	♂	Yarkand	J. Scully	1875	6.75	2.5	9.5	4.5	4.5
4	♀	Ditto	Ditto	1889	?	?	16*	5	3.75
5	♂	Kandahar	T. Hutton	1846	?	2.5	11.5	4	2.75
6	♂	Ditto	H. B. Lumsden ..	1859	?	?	10.5	4.25	1.8
7	♂	Kashgar	Dr. F. Stoliczka ..	1874	8.25	2.5	11.25	4.5	3.25
8	♀	"Persian Gulf"	J. Murray	1880	7.75	2	12.25	3.75	8.5
9	♂	Kuhak, Seistan	A. H. McMahon...	1906	8	2.8	12.75	4.4	3.3
10	♂	Ditto	Ditto	1906	7.9	2.75	11.1	4.35	3.5
11	♂	Ditto	Ditto	1906	8	2.5	12.5	4.3	1.75
12	♂	Ditto	Ditto	1906	7.75	2.7	15	4.5	1.25
13	♂ Juv.	Ditto	Ditto	1906	7	2	5.1	3	Horns touch.
14	♂ Juv.	Ditto	Ditto	1906	6	2	1.25	1.5	1.65
15	♂	...	...	...	8.5	2.75	13	5.25	2
1	♂	Yarkand	Dr. F. Stoliczka...	1874	8	2.5	10.5	4.25	3.25



Gozella subquittus osa. $\frac{1}{8}$ th scale.

GAZELLA PICTICAUDA, Brooke.

(THE GOA OR TIBETAN GAZELLE.)

No	Sex	Locality.	Donor.	Year	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	♂	Tibet	No history	...	...	...	11.75	3.5	4.5
2	♂	Do.	F. Jenkins	1846	?	2.75	13.25	3.5	8.75
3	♂	...	Do.	1846	?	...	13.3	3.75	5.25
4	♂	Kukchu near 15,000 ft.	N. Elias	1879	7.75	2.5	11.75	3.75	4.75

Distribution :—The Tibetan plateau, 13,000 to 18,000 ft.

Record Head :—Length 14.75 in. (cf. Rowland Ward, *Horn Measurements*, Appendix, p 5).

Cf. Blanford, *Fauna of British India*. Mammalia n 599



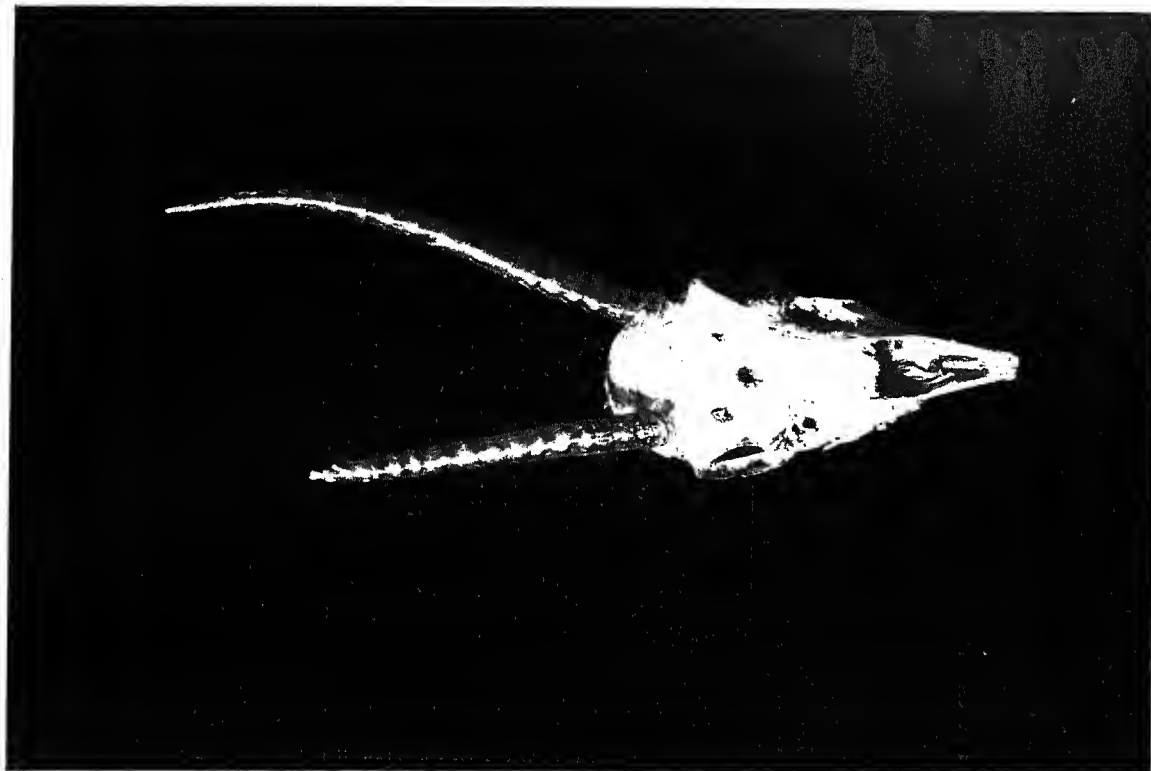
Gazella pecticaudata, 14th scale.

No.	Sex.	Locality	Donor	Year.	Basal length of skull.	Breadth of skull	Length of horn.	Circumference.	Tip to tip.
1	♂	Pubb Hills, Sind	Karachi Mus.	1879	?	?	10.5	3.75	6.5
2	♂	Sind	W. T. Blanford	1870	?	?	10.3	3.75	4.75
3	♂	Chanda, C. P.	Mus. Coll.	1867	?	?	9	4	6.25
4	♂	Sind	W. T. Blanford	?	?	?	5.25	3.25	2.25
5	♂	Allahabad Dist.	J. Cockburn	1879	6.5	2.5	7.75	3.75	3.25
6	...	?	Zool. Gardens	?	6.75	2.5	4.75	1.75	4.25
7	...	Banda Dist., U. P.	J. Cockburn	1879	7.5	2.8	9.25	3.5	2.75
8	...	?	Zool. Gardens	?	7.75	2.75	9.75	4.3	4.5
9	...	Allahabad Dist.	J. Cockburn	1879	?	2.5	9.25	4	4.8
10	...	?	?	?	?	?	7.5	3.75	4
11	...	Allahabad Dist.	J. Cockburn	1879	6.5	2.75	9.25	4	3.5
12	...	Banda Dist.	Ditto	1881	7.75	2.5	12	3.75	6
13	...	Banda	Ditto	1879	?	?	5.75	1.8	1.75
14	...	Pind Dadan Khan	W. Theobald	1853	8.25	2.75	10	4	3.75
15	...	Pubb Hills, Sind	Karachi Mus.	1879	8	2.5	7.5	3.75	2.5
16	♂	Maytina	Ditto	1879	8	2.5	10.75	4	4.5
17	♂	Ditto	1879	8	2.75	12	4.25	6.5
18*	♀	Jalk, Baluchistan, 3,000 ft.	W. T. Blanford	1872	7	2.25	5.25-7.5	1.75	3.25

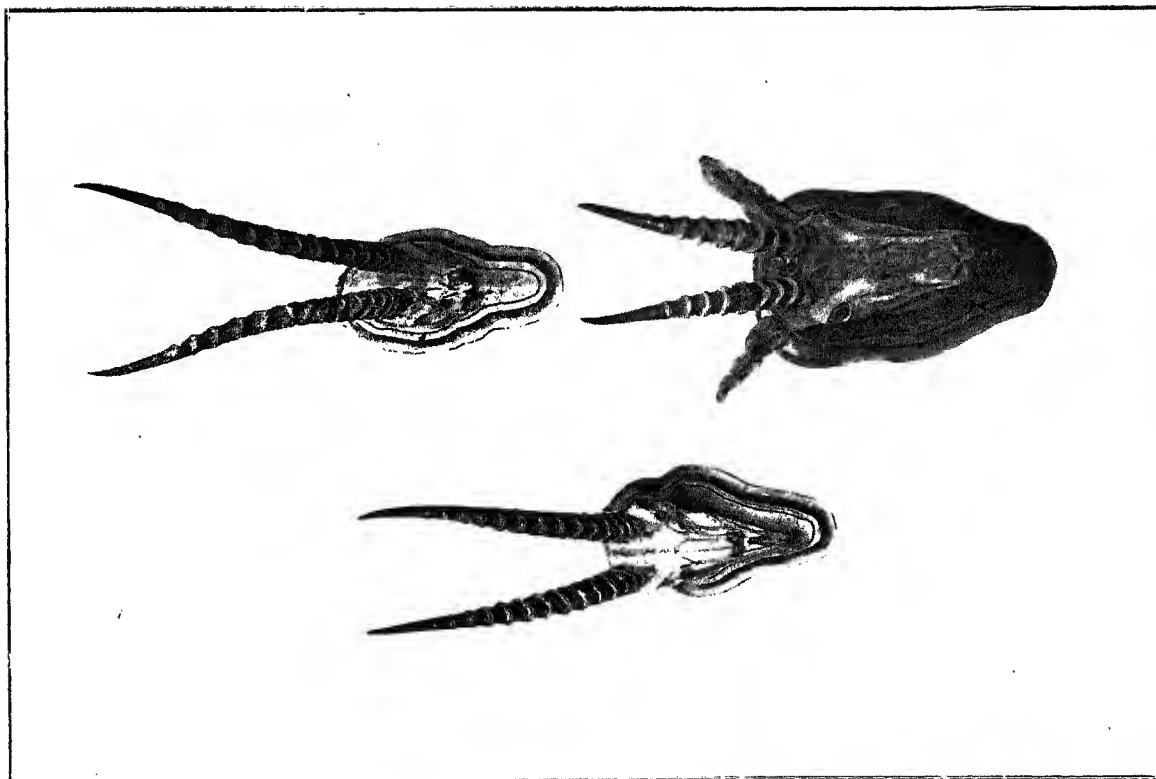
Distribution :—North-Western and Central India through Baluchistan to Beshire: absent on Malabar Coast, in Ceylon, Lower Bengal and the Western Ghats of the Bombay Presidency.

Record Head :—Length 15 in. Circumference 5 in. (*cf.* Lydekker, *Game Animals of India*, p. 202).
(*cf.* Blanford, *Fauna of British India*, Mammalia, p. 526.

* Type of Blanford's *Gazella fusca fusca*.



Gazella bennetti, 3rd scale.
Type of Blanford's *G. fuscifrons*.



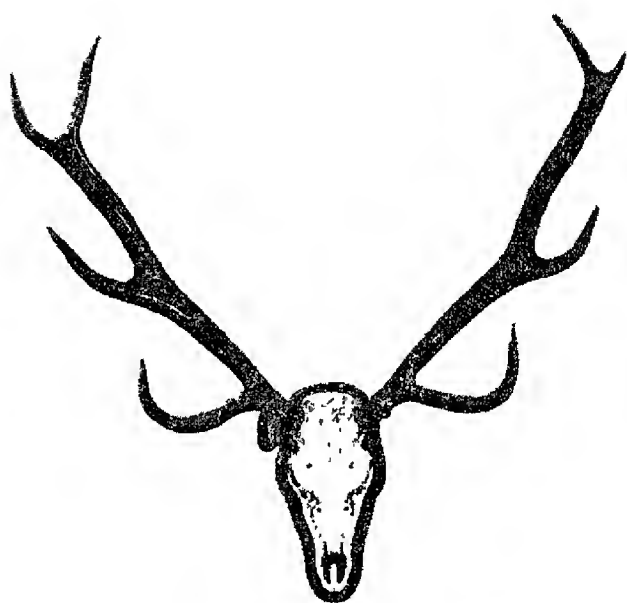
Gazella bennetti, 4th scale.

CERVUS CASHMEERIANUS, Falconer.

(THE KASHMIR STAG OR HANGUL)

No.	Locality	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference.	Widest inside	Tip to tip.	Points.
1	Kashmir Valley	...	1878	15.25	5.75	33	6	23	5.5	5 x 5
2	?	R. Lydekker	?	?	?	41	6.5	...	...	6 x 6
3	?	No history	?	?	?	40.8	4.75	30.25	15.75	6 x 5
4	?	Do.	?	?	?	23.5	5.75	...	...	3 x 4
5	Upper Wurdwan, Kashmir.	S. J. Stone	1887	15.5	5.25	36.5	5.5	23.6	37.25	5 x 5
6	?	No history	?	?	?	27	4.25	24.25	25.75	5 x 4
7	Purchased	...	1872	?	?	32.75	5.75	...	...	5
8	.....	R. C. Beavan	1865	?	?	34.75	6	...	...	6
9	Bokhara	Purchased	1872	?	?	29.5	5.5	...	...	5
10	Oxus R. nr. Balkh	C. E. Yate	1887	?	?	23	4.75	...	...	4

Distribution :—Kashmir pine forests between 9,000 and 12,000 ft.
Record Head :—Length 48.5 in. *cf.* Lydekker, *Game Animals of India*, etc., p. 2(3).
Cf. Blanford, *Fauna of British India*, Mammalia, p. 575



Cervus cashmeerianus, ♂ 8th scale.

CERVUS AFFINIS, Hodgson

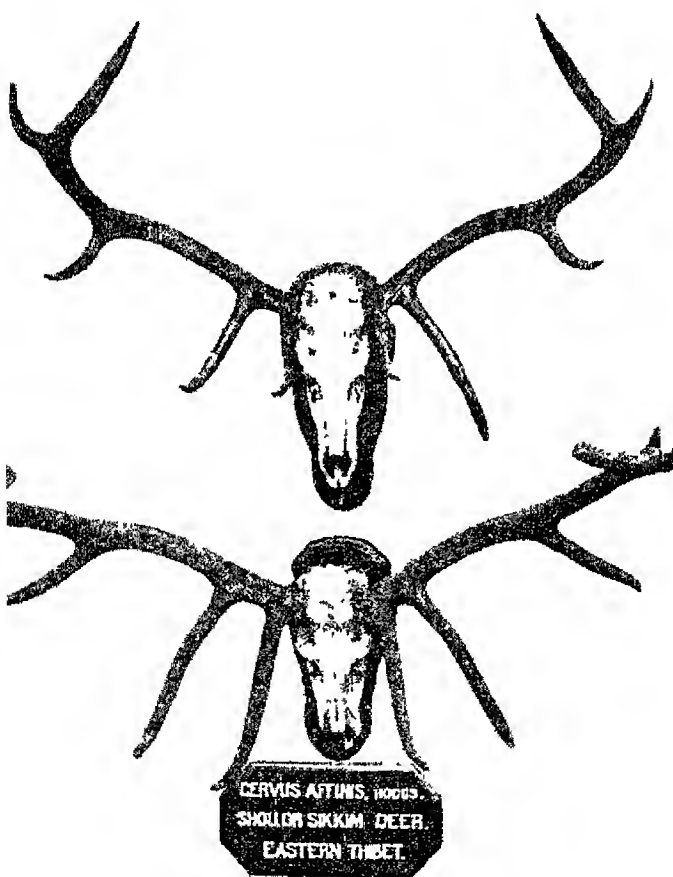
(THE SHOU.)

No	Locality.	Donor	Year.	Basal length of skull	Breadth of skull.	Length of horn.	Circumference	Widest inside.	Tip to tip	Points
1	Near Phari, Tibet ...	Sir A. Eden	1882	17.25	6.25	43	7	41.25	46.25	5 x 6
2	Near Dhoulagiri, Tibet.	Barrackpore Menagerie	1856	?	?	42	6.25	...	...	...
3	Near Phari, Tibet ...	A. Campbell	1851	16.75	5.75	37.75	6.75	36.75	40.25	5 x 5
4	Sikhim	J. Mandelli	1877	?	?	46.75	5.75	36.25	20	5 x 5

Distribution :—Eastern Tibet and the Chumbi Valley to Sikhim.

Record Head :—Length 55.75 in. Circumference 6.5 in. Tip to tip 17.25 in. (*cf.* Rowland Ward, *Horn Measurements*).

Cf. Lydekker, *Game Animals of India*, p. 218



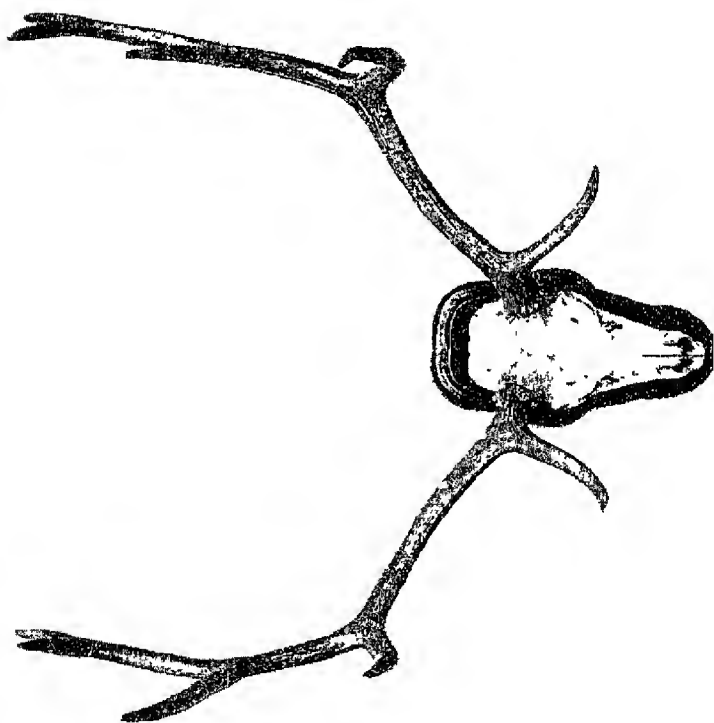
Cervus affinis, $\frac{1}{30}$ th scale.

CERVUS DYBOWSKII, Sclater.

(THOROLD'S DEER.)

No	Locality.	Donor	Year.	Basal length of skull	Breadth of skull.	Length of horn.	Circumference	Widest in side.	Points.	Tip to tip.
1	"Darjeeling Bazaar"	A. M. Dunne	... 1888	15 25	5 75	32 25	4 75	33	5 x 5	31 75

Distribution :—Tibet.*Record Head* :—Doubtful.*Cf.* W. L. Sclater, *Journ. As. Soc. Bengal*, vol. lviii, p. 186 ; and Lydekker, *Deer of all Lands*, p. 91.



CERVUS EUSTEPHANUS, Blanford.

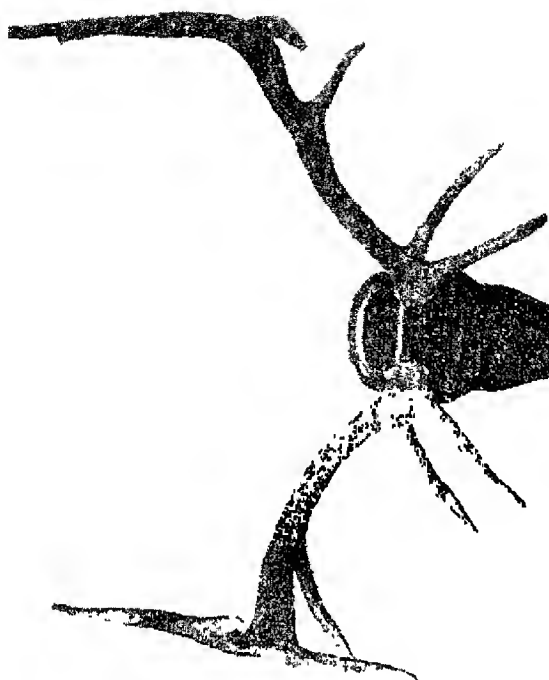
(THE ALTAI WAPITI)

No.	Locality.	Donor.	Year.	Length of horn.	Circumference.	Points.
* 1	Thian Shan Mts.	Dr. F. Stoliczka	1874	51·5, 50·1	10·9, 10·5	8 × 7

Distribution :—The Altai and Thian Shan Mountains.

Note :—Probably these two horns were not from the same animal.

Cf. Blanford, *Proc. Zool. Soc.*, 1875, p. 637.



GEORGE EUSTEFANUS
THAN SHAN MOUNTAIN
25 YAK AND MISSION 8734

1

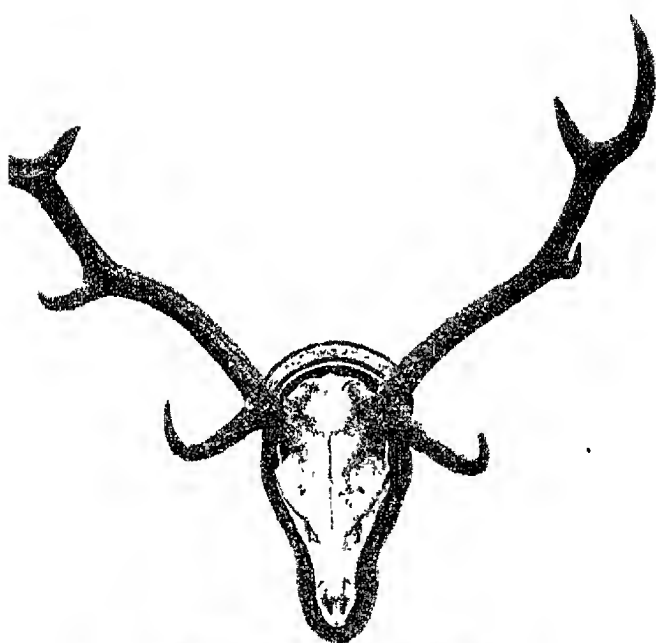


CERVUS SIKA, Temminck.

(THE COMMON SIKA.)

No	Locality.	Donor.	Year.	Basal length of skull	Breadth of skull.	Length of horn	Circumference	Widest inside	Points	Tip to tip.
1	Japan	...	1884	11.75	4.25	23.5	4.25	18.75	4 x 4	20.25

Distribution:—Japan and Northern China.*Record Head*:—Length 31.25 in. Circumference 5.25 in. Tip to tip 27.2 in. (*cf.* Rowland Ward, *Horn Measurements*, p. 25).*Cf.* Lydekker, *Deer of all Lands*, p. 113.



CERVUS SIKI TEM
THE JAPANESE DEER
HAKODATE MUSEUM

Cervus sika, ½th scale.

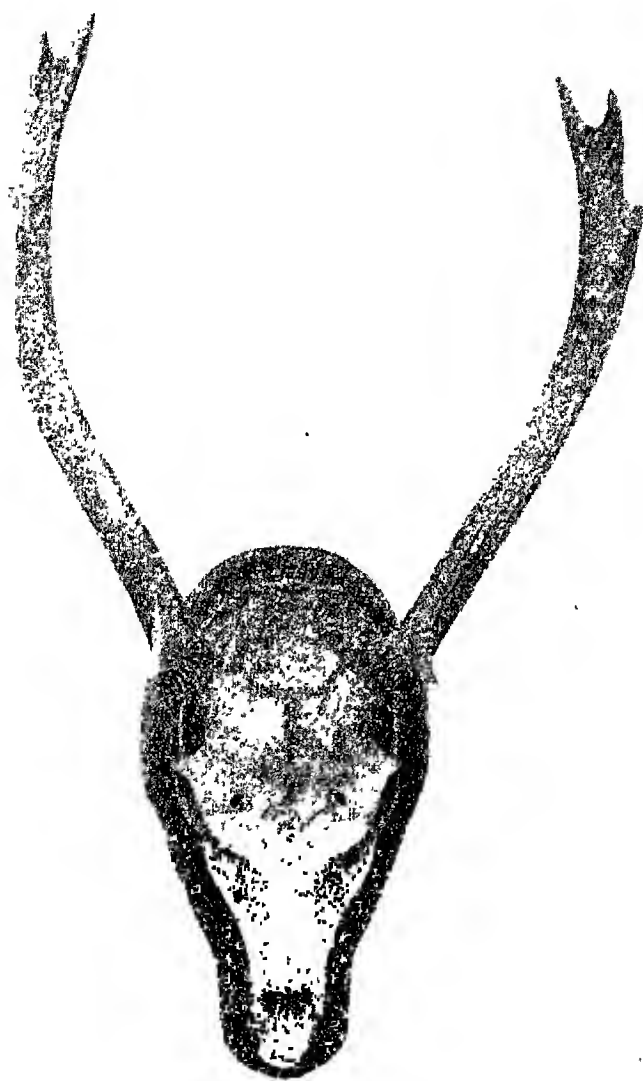
CERVUS TAËVANUS, Blyth.

(THE FORMOSAN SIKA)

No.	Locality	Donor	Year.	Basal length of skull.	Breadth of skull.	Length of horn	Circumference.	Widest made.	Tip to tip.	Points
*1	Formosa	... R. Swinhoe	... 1860	10.75	3.75	14	3.25	8.5	7	4 x 4

Distribution:—The Island of Formosa.
Cf. Blyth, Journ. As. Soc. Bengal, vol. xxix, p. 90.

* Type of Blyth's *Cervus taëvanus*.



Cervus taivanus, $\frac{5}{12}$ th scale.

CERVUS ARISTOTELIS, Cuvier.

(THE SAMBAR.)

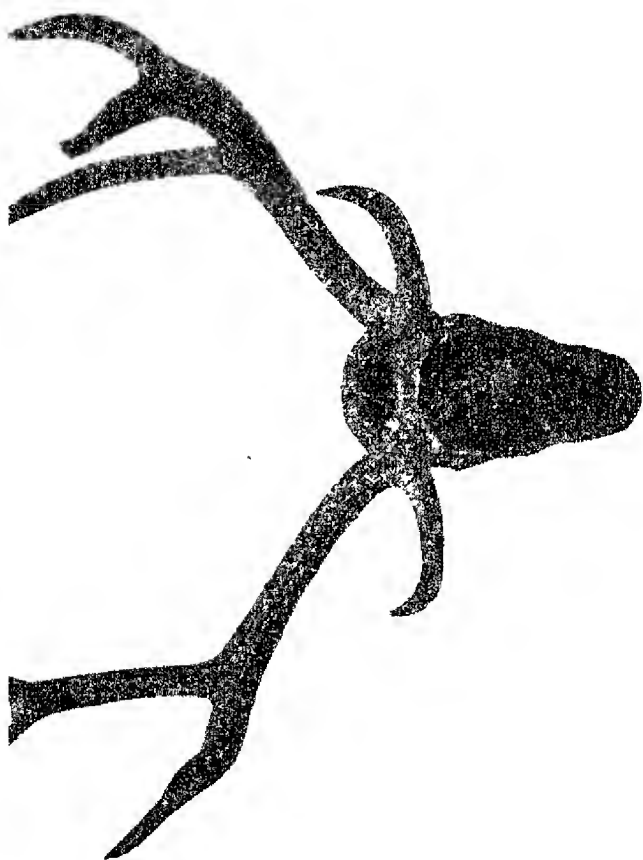
No	Locality.	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference.	Widest inside.	Points.	Tip to tip.
1	No history	J. Pybus	1847	?	?	30.5	6.75	16	3 x 3	14.25
2	Ditto	Ditto	1847	?	?	22.25	4.75	18.5	3 x 3	18
3	Ditto	Ditto	1847	?	?	23.5	4.75	13.75	3 x 3	11.25
4	Ditto	Ditto	1847	14.25	4.75	17	4	12.75	3 x 3	14.75
5	Assam	Col Jenkins	1846	15	5.5	20.5	6	12.8	3 x 3	8.5
6	Arakan	Col Phayre	1847	15	4.8	20.5	4.75	15.5	3 x 3	15.75
7	Ditto	Ditto	1847	?	?	23.5	4	16.8	3 x 3	13.5
8	Ditto	Ditto	1847	?	?	24.8	4.5	20.5	3 x 3	19.5
9	Assam	E. V. Westmacott	1866	14	4.75	22.75	4.6	...	...	...
10	No history	J. Pybus	1847	14.5	4.25	12.75	4.5	9.5	3 x 3	9.5
11	Ditto	Ditto	1847	14	?	23.5	4.5	8.25	3 x 3	8
12	Ditto	Ditto	1847	12.25	4.75	23.3	5.25	18.5	3 x 3	18.5
13	Ditto	Ditto	1847	?	?	29.75	6.25	...	3 x 3	...
14	Central India	S. R. Tickell	1846	?	?	19.5	4.5	21.5	3 x 3	19
15	?	?	?	?	?	34.75	6.75	...	3 x 3	...
16	Banda Dist.	J. Cockburn	1886	?	?	38.75	6.75	27.75	3 x 3	26
17	Coromandel Coast	Purchased	1848	?	?	43	10	...	5 x 4	...
18	Himalayas	J. J. Attanass	1843	16.75	5.3	26.5	5	18.5	3 x 3	11
19	?	?	?	?	?	29.8	6	19	3 x 3	16.25
20	Banda Dist.	J. Cockburn	1886	16.5	5.25	30.75	6	31	4 x 3	26.75
21	No history	J. Pybus	1847	?	?	31.75	6.5	24.25	3 x 3	14.75
22	Ditto	Ditto	1847	?	?	26.75	5.25	24.25	3 x 3	18
23	Assam	Raja R. Mullick.	1846	16	5	23.25	6	17.25	3 x 3	14.25
24	No history	J. Pybus	1847	?	?	25.5	5	20.8	3 x 3	19.5



Cervus aristotelis, $\frac{1}{2}$ th scale.

(THE SAMBAR)---continued

No.	Locality.	Donor.	Year.	Basal length of skull	Breadth of skull	Length of horn	Circumference	Widest inside.	Points.	Tip to tap.
25	Assam	H. Butcher	1879	?	5.25	25.75	5.25	29.5	3 x 3	29.3
26	Rewah, U. P.	Dr. Waller	1879	16.25	5.8	28.75	5	21.75	3 x 3	...
27	No history	J. Pybus	1847	15.5	6.25	31.5	6.25	31.75	4 x 3	13.75
28	Arakan	Sir A. Phayre	1874	?	?	17.75	5	12.25	3 x 3	9.25
29	Assam	H. Butcher	1879	?	?	22.25	4.75	15.5	3 x 3	15.75
30	No history	O. W. Malet, Esq.	1896	?	?	24.25	5.75	9.75	5 x 6	3.25
31	Ditto	Ditto	1896	?	?	15.25	4	10.25	3 x 3	13
32	Assam	H. Butcher	1879	?	?	24.25	5.8	15.75	3 x 3	15
33	No history	W. Masters, Esq.	1886	?	?	19.25	4	13.75	2 x 3	13.5
34	Almora	No history	?	15.25	4.75	30.25	5.25	15.25	9 x 7	15
35	Mirzapore	J. Cockburn	1886	...	...	40.75	6.75	...	3 x 3	...
36	Ditto	Ditto	1886	...	...	40	6.5	...	3 x 3	...
37	No history	.....	...	...	...	34.5	6.75	...	2	One horn only.
38	Ditto	.....	...	...	...	31.25	6	...	4	Ditto
39	.....	R. C. Beavan	1865	...	...	26	5	...	4	Ditto
40	.....	Zool. Gardens	1880	...	...	27.75	5.5	...	4 x 4	...
41	.....	Ditto	1881	...	...	26.5	5	...	3 x 3	...
42	Mirzapore	J. Cockburn	1886	...	...	28.75	7.25	...	3 x 3	...
43	.....	Zool. Gardens	1882	...	...	30.25	5.25	...	3 x 3	...
44	....	Hon Justice Nor-man.	...	...	...	27.75	7.5	...	3	One horn abnor mal.



CERVUS ARISTOTELIS, Cuvier—concluded.

(THE SAMBAR)—concluded.

No	Locality.	Honor.	Year.	Basal length of skull	Breadth of skull	Length of horn	Circumference	Widest inside.	Points.	Tip to tip.
45	R. C. Beavan	1865	...	.	24.75	4.75	...	2	1 horn only.
46	Zool. Gardens	1882	...	...	26	4.25	...	3 × 3	Ditto.

Distribution:—Throughout the Oriental region in hilly forest tracts. Wanting in Sind, Rajputana, and the Punjab.

Record Head:—Length 50.12 in. Circumference 9.38 in. (*cf.* Lydekker, *Game Animals of India*, p. 226).
Cf. Blanford, *Fauna of British India*, Mammalia, p. 543.

CERVUS UNICOLOR SWINHILL, Brooke.

(THE FORMOSA DEER.)

No.	Locality.	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn	Circumfer- ence.	No. of points.
1	Formosa	... Zool. Gardens	... 1882	?	?	15.25	3.15	3.3

Distribution:—The Island of Formosa.
Record Head:—Length just under 20 in. (cf. Rowland Ward, *Horn Measurements*, p. 12).
 Cf. Lydekker, *Deer of all Lands*, p. 154.

CERVUS HIPPELAPHUS, Cuvier.

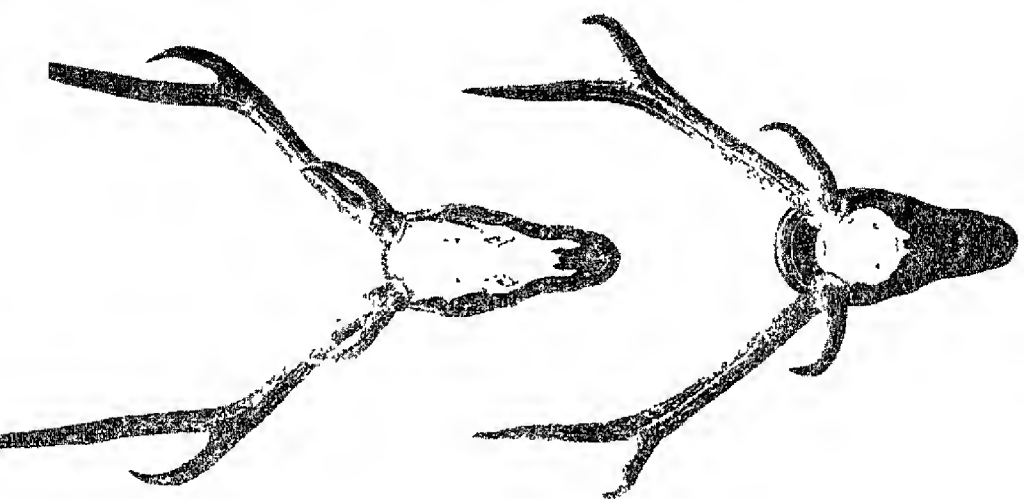
(THE JAVAN SAMBAR)

No	Locality.	Donor	Year	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence.	Tip to tip.
1	Moluccas							
2	Ditto	Zool. Gardens	1882	11	3.75	11.9	3.25	6.5
3	Java	Ditto	1882	?	?	8.3	2.75	7.25
4	Ditto	Batavian Society	1884	?	?	21.75	5.75	..
5	Ditto	Ditto	1884	?	?	28.5	5.5	16
6	Ditto	Ditto	1884	?	4.25	29.25	5.25	19.5
7	Ditto	Ditto	1884	?	?	28.25	4.75	13
8	Mauritius	Ditto	1884	10	3.25	21.25	3.5	13.3
9	Ditto	Willis Earle, Esq	1842	?	?	28	4.25	15.5
10	Ditto	Ditto	1842	?	?	31.25	5.5	9.5
		Y. Hugon, Esq.	1855	?	?	16.5	3	11.75

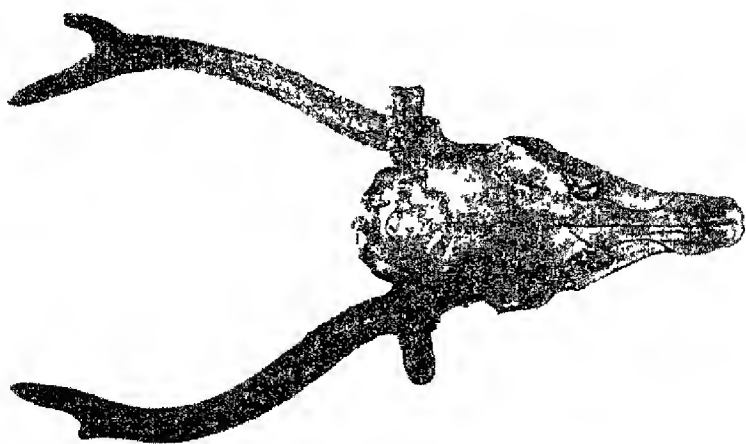
Distribution.:—Java, the Celebes Islands, Timor and the Moluccas. Introduced into Mauritius
Cf Lydekker, *Deer of all Lands*, p 162

2

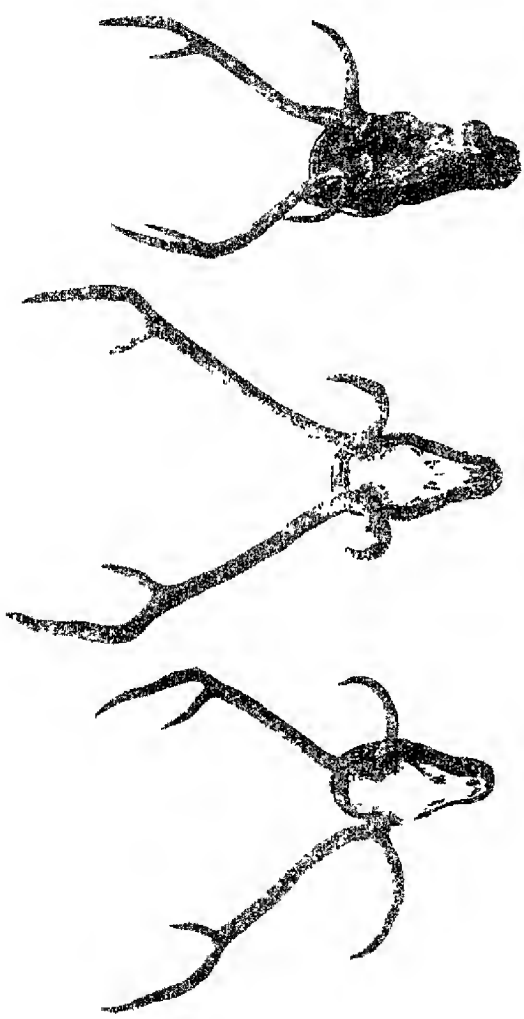
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No.	Locality	Donor	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumfer- ence	Tip to tip.	Points.
1	?	No history	?	10·75	3·5	16·8	5·25	9·5	3 × 3
2	?	Ditto	?	11·25	3·75	29·75	3·75	22·75	4 × 3
3	?	Ditto	?	?	?	15·75	2·25	13	4 × 3
4	?	Ditto	?	11·25	4·25	30·25	3·75	17·75	3 × 3
5	Manbhoom, Bengal...	R. C. Beavan	1846	?	?	31	4·25	15·5	3 × 3
6	?	Purchased	1842	10·25	3·75	24·25	3·25	15	2 × 2
7	?	Ditto	1842	?	?	33	3·75	20·75	4 × 3
8	Ceylon	E. Higgins	1846	?	?	24	4	15·5	3 × 3
9	?	No history	?	?	?	27·5	4	16·75	3 × 3
10	?	Ditto	?	?	?	29·5	4·25	13·5	3 × 3
11	Manbhoom, Bengal...	R. C. Beavan	1845	9·75	3·75	17·75	3·25	12	3 × 3
12	Mirzapore Dist. ...	J. Cockburn	1886	10·75	4	34·75	4·75	19	4 × 3
13	?	No history	?	?	4·25	15·25	9·75	21·25	2 × 3
14	/	Ditto	?	?	?	29·5	4·25	16·5	5 × 5
15	/	Ditto	?	?	3·75	26·25	3	5·25	3 × 3
16	.....	No history	...	...	...	29	3·75	...	3
17	.....	Zool. Gardens	1882	...	...	20·75	3·5	...	(Only one horn.)
18	....	Ditto	1880	..	.	19·5	3·5	.	3 × 3 3 × 2

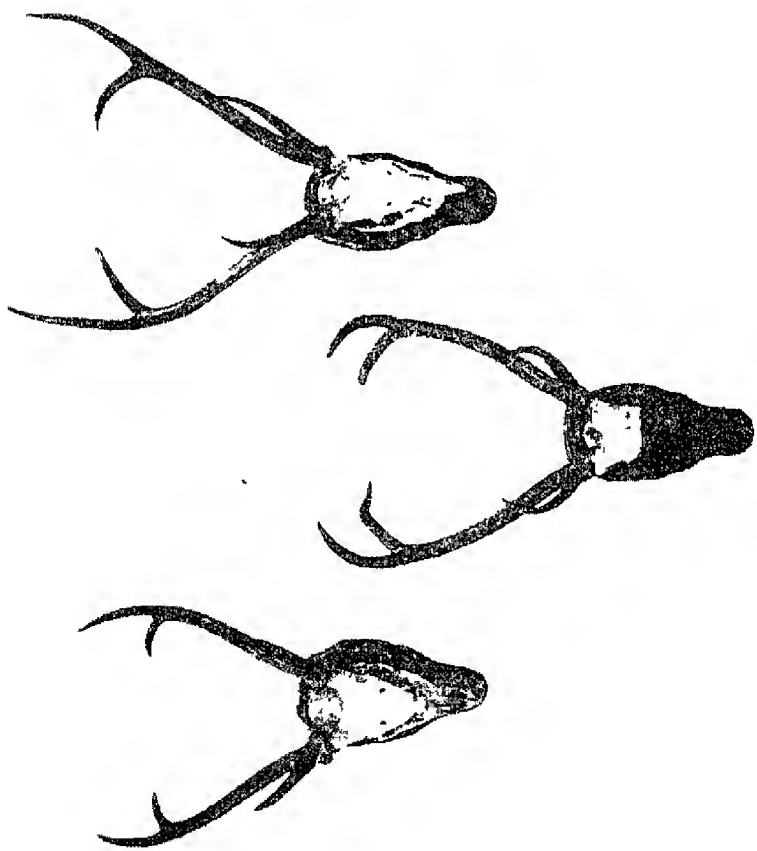


Cereus uars, 7th scale.

CERVUS PORCINUS, Zimmerman.

(THE HOG DEER.)

No	Locality.	Honour	Year.	Basal length of skull.	Breadth of skull.	Length of horn	Circumference.	Tip to tail
1	Malabar	W. Masters, Esq.	1842	8.25	3.25	18.75	3.25	15.25
2	Assam	H. Butcher	1879	..	...	15.25	3.25	11.25
3	Martaban	R. C. Beavan	1865	..	...	18	2.75	10.25
4	Calcutta	Zool. Gardens	1878	..	...	8.75	2.75	6.25
5		Purchased	1844	6.5	2.75	14.25	3	10
6	Assam	H. Butcher	1879	..	..	13.5	2.75	7
7	Do	Ditto	1879	..	..	18.5	3.5	11
8		W. Masters, Esq.	1842	..	...	18.75	2.75	12.25
9		Ditto	1842	..	..	15.8	3.1	10
10	Assam	H. Butcher	1879	..	...	14.75	3.75	8.25
11		No history	?	..	...	13.25	2.75	8.25
12	Assam	H. Butcher	1879	..	..	8	2.6	6.2
13	Do.	Ditto	1879	..	..	11.25	2.8	9.25
14	Do.	Ditto	1879	..	..	14.75	2.75	10.3
15	Do.	Ditto	1879	..	...	14.75	3	8.5
16	Do.	Ditto	1879	..	...	10.8	2.75	7.75
17		No history	1879	..	..	7.25	1.75	...
18		Ditto	...	..	...	6.75	2	...
19		Ditto	...	..	..	15.5	2.75	...
20		Ditto	...	..	...	14.75	2.75	6.75
21	Assam	H. Butcher	1879	..	...	13.25	2.75	10.5
22	Martaban	R. C. Beavan	1865	..	..	20.5	3.25	8.25
23		No history	...	..	..	14.5	2.75	6.5
24	Assam	H. Butcher	1879	..	..	16.5	2.75	8



CERVUS PORCINUS, Zimmerman—continued.

(THE HOG DEER)—continued.

No	Locality	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference.	Tip to tip
25	Assam	H. Butcher	1879	...	...	17.5	3.75	2.75
6	?	No history	..	...	..	14.75	2.75	...
2	?	Ditto	...	...	...	17.25	2.8	13
8	?	Ditto	..	..	..	18.25	3.6	5
29	Calcutta	Zool Gardens	..	...	..	13.25	2.75	7.5
30	?	No history	..	..	5	15.25	3.25	9.5
31	Calcutta	Zool Gardens	1877	7.25	2.5	8.5	2.75	8

Distribution.:—Sind and the Punjab to Assam and thence to Burma. Common in the Terai. Introduced to Ceylon

Record Head.:—Length 23.25 in. Circumference 3.6 in (*c/* Lydekker, *Game Animals of India*, p 242)
C/ Blanford, *Fauna of British India Mammalia* p 519

No.	Locality	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference	Widest inside	Points	Tip to tip
2	? ?	Purchased	1858	15.5	4.5	25.5	5	17.75	7 x 7	17.75
3	Assam	Ditto	1858	?	?	22.25	4.5	16.75	5 x 5	17.75
4	Nerbudda	H. Butcher	1879	?	?	20.75	4.75	18.5	7 x 6	18.75
5	?	Raja R. Mullick	1850	10.75	3.75	4.25	2.75	...	2 x 2	3.75
6	?	Purchased	1858	14.5	4	13.5	4.75	19.25	6 x 5	23.5
7	Upper Bengal	Ditto	1858	?	?	15.75	3.5	12.5	5 x 6	10.75
8	Shillong, Assam	T. Hardwicke	1822	?	4.75	28.5	5.25	20.5	7 x 6	14.25
9	?	Purchased	1879	?	?	30.25	5.3	20.6	4 x 4	22.5
10	?	No history	1858	?	4.5	32.5	5.25	32.25	6 x 6	28.5
11	?	Ditto	1858	?	?	24	6.25	23.25	8 x 7	19
12	?	Ditto	1858	?	?	27.5	5.25	23.75	7 x 7	22.5
13	Assam	Ditto	1858	?	...	27.3	5.8	26.5	10 x 8	22.25
14	?	R. W. G. Frith	1842	?	4.75	27.25	5.25	22.75	7 x 7	20.5
15	Tezpur, Assam	No history	1858	?	?	27.25	5.25	28.5	10 x 10	21.4
16	Lakhimpur, Assam...	H. Butcher	1879	...	?	30.25	5.5	24.5	6 x 7	18.75
17	Calcutta	Ditto	1879	...	...	27.75	4.8	27.25	7 x 7	20.75
18	.....	Zool. Gardens	1877	15.25	3.75	20.5	4	17	4 x 4	25.25
		No history	...	...	...	27.25	5.25	...	6	Single horn only.
20	...	Ditto	.	...	...	24	4.75	...	5	Ditto.
2	.....	Ditto	.	...	...	18	4.75	...	5	Ditto.
	.....	Ditto	...	...	...	21.25	4.75	.	5 x 5	...

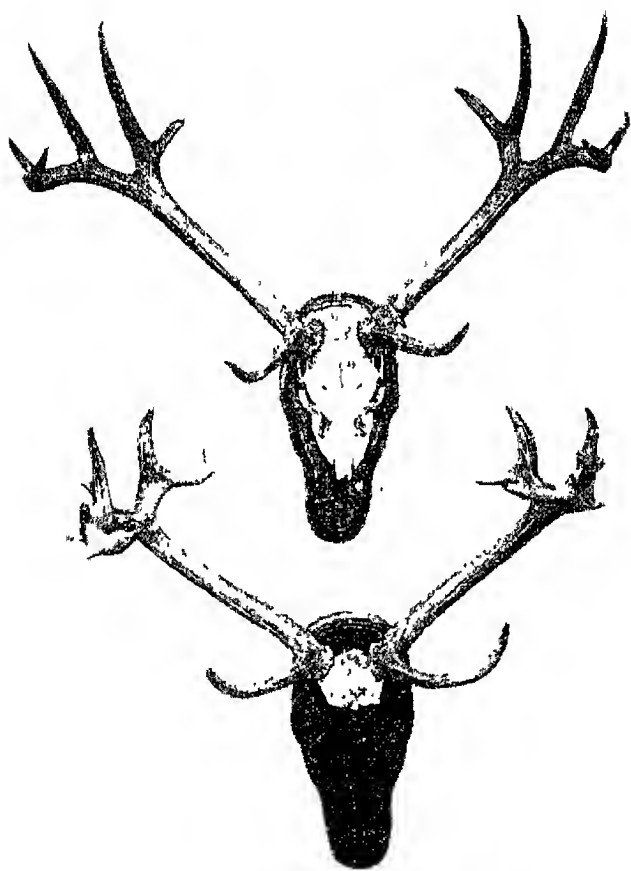
CERVUS DUVAUCELI, Cuvier—continued.

(THE SWAMP DEER OR BARASINGHA)—continued

No.	Locality	Donor.	Year.	Basal length of skull	Breadth of skull	Length of horn.	Circumference.	Widest inside	Points.	Tip to tip.
21	Sirgoojah (Chota Nagpur).	J. Cockburn	1886	...	...	35.5	5	.	6 × 6	...
22	.....	Zool. Gardens	1883	...	...	16.75	4.25	...	4 × 4	...

Distribution:—The base of the Himalayas from Kyarda Doon to Bhutan: Assam, along the Brahmaputra valley to the Sunderbunds. Occurs also in the Central Provinces from Mandhla to Midnapore.

Record Head:—Length 41 in. Circumference 5.5 in. (*cf.* Rowland Ward, *Horn Measurements*, p. 17).
Cf. Blanford, *Fauna of British India*, Mammalia, p. 539



Cervus dauricus, 1st scale.

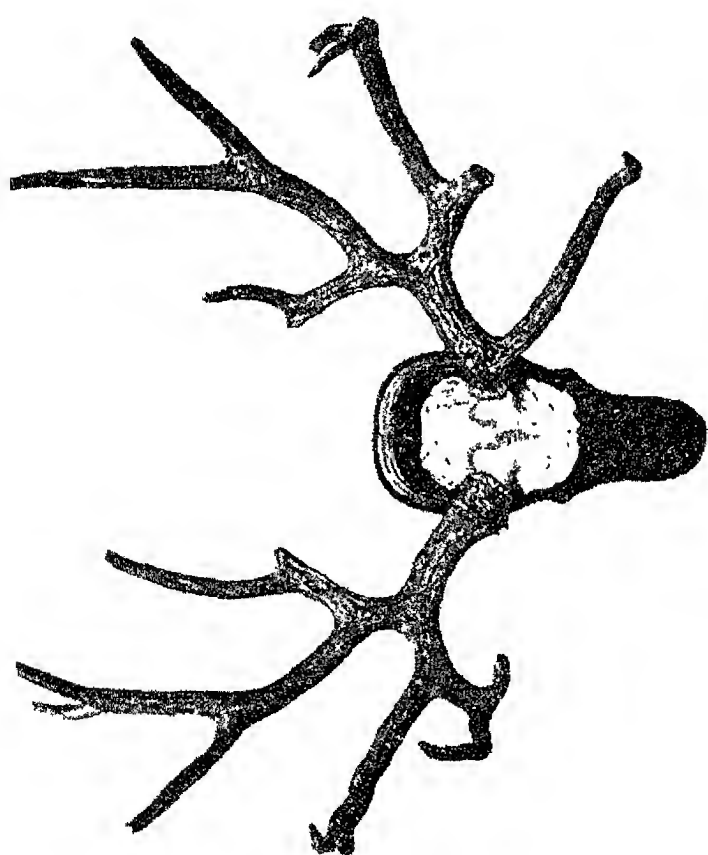
CERVUS SCHOMBURGKI, Blyth.

(SCHOMBURGK'S DEER)

No.	Locality.	Donor	Year	Length of horn	Circumfer- ence	Widest inside	Points	Tip to tip.
1	Sanda Valley, Yunnan ...	J. Anderson	1878	30.25*	5.25	28.75	10 x 8	16.25

Distribution:—North Siam and Yunnan.
Of. Lydekker, *Deer of all Lands*, p. 194.

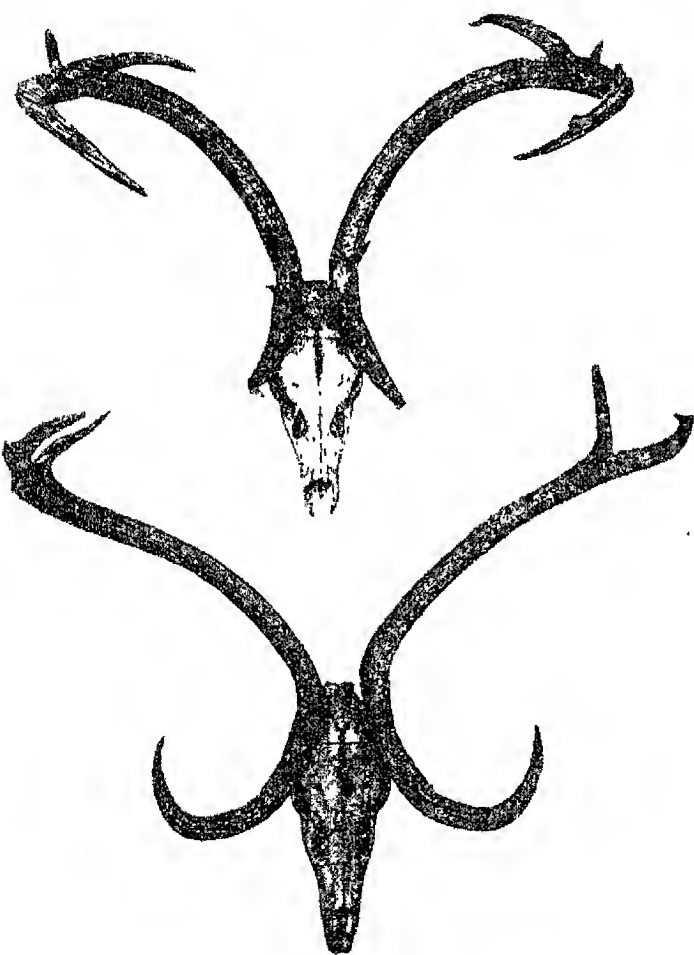
*Record



CERVUS ELDI, Beavan.

(THE THAMINE.)

No.	Locality	Donor.	Year	Basal length of skull	Breadth of skull.	Length of horn	Circumfer- ence.	Points.	Tip to tip.
1	Sitang R., Tenas- serm.	Maj. Bendrore	1856	13.4	3.75	33.75	5.5	8 x 9	14
2	Manipur	Col. Guthrie	1861	?	/	22.25	3.75	2 x 2	17.25
3	Pegu ...	Sir A. Phayre	1847	12.5	3.75	19.75	4.75	5 x 5	22.75
4	Manipur	J. McClelland	1844	/	3.5	26.8	4.5	5 x 5	16.5
5	Martaban, Tenasserim	R. C. Beavan	1865	?	/	17.25	3.25	4 x 4	15.75
6	Penang	H. Lewis	1846	?	/	22.75	4.5	4 x 4	18.5
7	Manipur	J. McClelland	1844	11.9	3.75	33.75	4.75	5 x 4	26.75
8	Ditto	Purchased	1861	/	/	21.8	4	5 x 5	15.9
9	"Rangoon Bazaar" ...	Dr Pritchard	1861	?	3.5	13.25	2.75	4 x 3	10
10	Pegu ...	Sir A. Phayre	1847	/	/	28.75	5.3	5 x 6	26.75
11	Manipur	J. McClelland	1844	12.25	3.75	32.25	4.25	7 x 6	27.25
12	Pegu ...	Sir A. Phayre	1847	12.4	3.75	31.9	5.25	5 x 4	20.25
13	Manipur	Purchased	1861	11.75	4.1	30.4	5.5	6 x 7	27.5
14	Pegu .	Sir A. Phayre	1847	/	/	24.75	4.5	4 x 5	22.4



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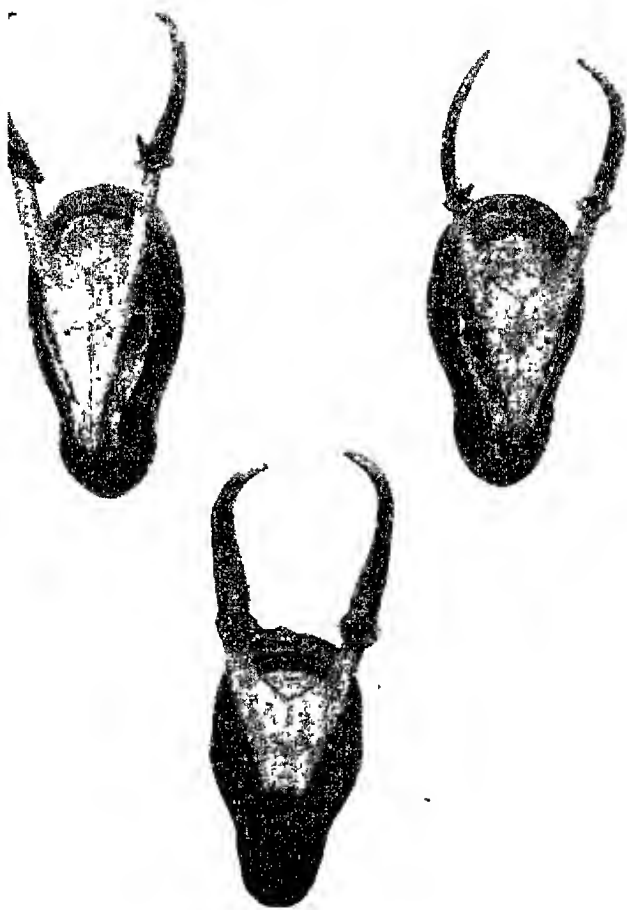
Cervus elii, ♂th scale.

CERVULUS MUNTJAC, De Blainville.

(THE BARKING DEER.)

No.	Locality.	Year.	Date	Basal length of skull	Breadth of skull	Length of horn	Circumfer- ence.	Tip to tip.
1	No history	?	?	7.5	2.25	3.25	1.75	3.5
2	Dibrugarh, Assam	Purchased	1879	7.75	2.75	5.25	2.25	4.3
3	...	A. Mason	...	?	?	8.25*	3.25	2.5
4	Arakan	Sir A. Phayre	1872	?	?	2.5	1.5	3.25
5	Ditto	Ditto	1896	?	?	3.25	1.8	3.5
6	Nepal	B. H. Hodgson	1896	7	2.5	5	2.25	2.75
7	No history	?	1844	8	2.3	...	...	...
8	Ditto	?	?	7	2.25	5.6	2.25	2.5
9	Shevaroy Hills, Madras	Mrs. W. King	1888	8.25	2.25	2.5	1.75	3.25
10	Nepal	Raja R. Mullick	1852	7.8	2.25	5.25	2.25	2.75
11	No history	?	?	7.75	2.25	2.25	1.25	3.25

Distribution.:—India, Nepal, Ceylon, Burma, the Malay Peninsula, Java, Banka, Borneo and Hainan.
Cf. Blanford, *Fauna of British India*, Mammalia, p. 532.



Cervulus muntjac, 1/2th scale.

CERVULUS FEÆ, Thomas and Doria,

(FEA'S RIB-FACED DEER.)

No specimen in the Museum.

Cf. Thomas and Doria, *Ann. Mus. Civ. Gen.*, 2, 2a, vii, p. 92.

CERVULUS REEVESI, Swinhoe.

(THE CHINESE MUNTJAC)

No	Locality	Donor.	Year.	Basal length of skull.	Breadth of skull.	Length of horn.	Circumference	Tip to tip.
1	Formosa	... R. Swinhoe	1860	6.25	2	2	1.25	2.25

Distribution.—S China to Ningpo Formosa
Cf. Lydekker, *Deer of all Lands*, p. 205



1

Cervulus reevesi, 3rd scale.

CAPREOLUS PYGARGUS, Gray.

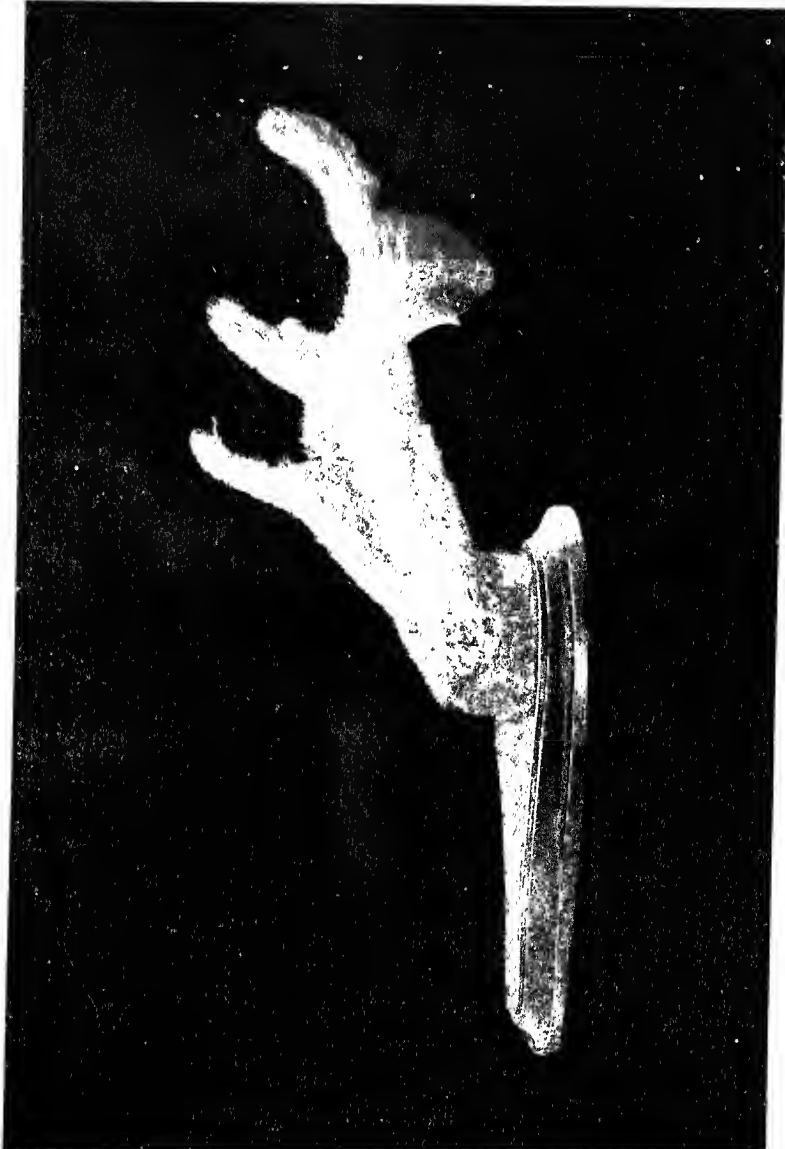
(THE SIBERIAN ROE-DEER)

No	Locality.	Donor.	Year.	Length of horn.	Circumference.	Tip to tip.	Points.
1	Kashgar	... 2nd Yarkand Mission	1878—91	12	4.75	2.75	3 × 3

Distribution.:—From the Altai Range and the Mountains of Turkestan to Siberia; the Caspian province of Persia; in winter migrating to Manchuria and Corea.

Record Head.:—Length 15 in. Circumference 4.75 in.

Cf. Scientific Results Second Yarkand Mission, 1878—91; and Lydekker. *Deer of all Lands*, p. 227.



Capreolus pygargus, $\frac{1}{4}$ th scale.

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